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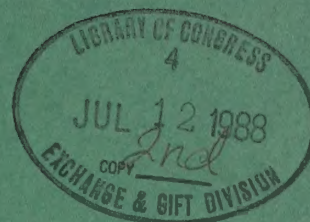
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Bureau of Mines Information Circular/1988



Analyses of Natural Gases, 1987

By **B. J. Moore and Stella Sigler**



UNITED STATES DEPARTMENT OF THE INTERIOR

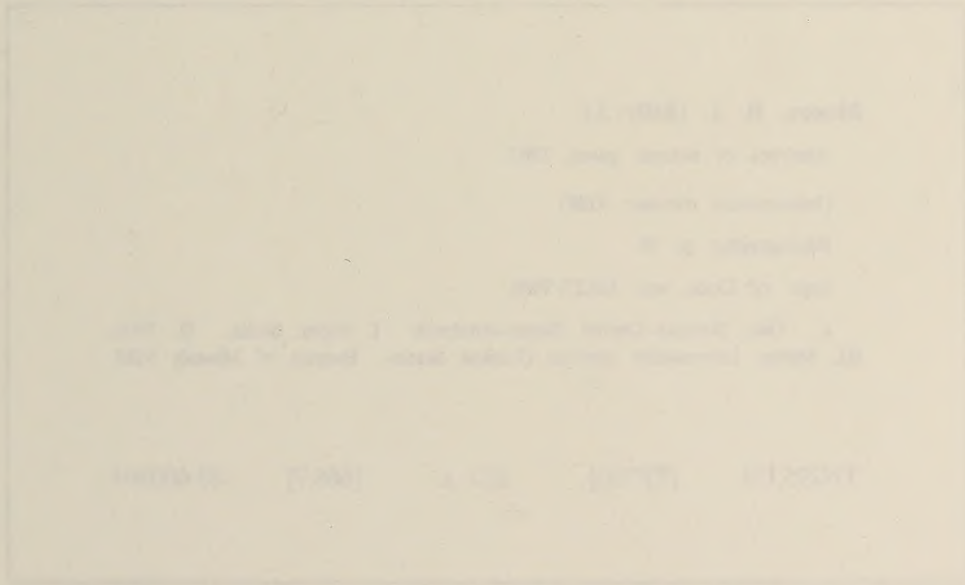


United States Bureau of Mines.

Information Circular, 9188 I.C.

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UNITED STATES DEPARTMENT OF THE INTERIOR
Donald Paul Hodel, Secretary

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T S Ary, Director

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ANALYSES OF NATURAL GASES, 1987

By B. J. Moore¹ and Stella Sigler²

ABSTRACT

This publication contains analyses and related source data for 191 natural gas samples from 22 states and 1 foreign country. Of the total samples, 182 were collected during calendar year 1987. The remainder were collected earlier, but releases granting permission to publish were not received before 1987. All samples were obtained and analyzed as part of Bureau of Mines investigations of the occurrences of helium in natural gases of countries with free market economies. This survey has been conducted since 1917. The analyses published herein were made by mass spectrometer and chromatograph.

¹Petroleum engineer.

²Helium resources survey clerk.

Section of Helium Resources Evaluation, Branch of Helium Resources, Helium Field Operations, Bureau of Mines, Amarillo, TX.

INTRODUCTION

This Bureau of Mines publication contains analyses and related source data for 191 natural gas samples from 22 states and 1 foreign country. Of these samples, 182 were collected during calendar year 1987; 9 samples were collected earlier, but releases granting permission to publish were not received before 1987. All samples were obtained and analyzed as part of Bureau of Mines investigations of the occurrences of helium in natural gases of countries with free market economies. This survey has been conducted since 1917. The analyses published herein were made by the mass spectrometer and chromatograph.

The results of these investigations are published annually to make the information available to the petroleum industry and the general public. Thirty-two publications have presented the results of 14,738 gas analyses made prior to 1987. The first three bulletins (1-3)³ contain analyses and related source data on 5,218 gas samples collected from 1917 through 1960; these bulletins have been supplemented annually by information circulars (4-17, 19-24, 26-30, 32) containing 9,520 analyses of samples collected since 1960.

In 1976, a compilation of the analyses made prior to 1975 was prepared by the Bureau of Mines and published by the National Technical Information Service of the U.S. Department of Commerce (18). This compilation contains 10,562 analyses

of gas samples from gas and oil wells and natural gas pipelines in 37 States and 23 foreign countries. In 1982, a compilation of analyses made prior to 1981 was published (25). The 1982 publication contains 12,554 analyses of gas samples from gas and oil wells and natural gas pipelines in 39 States and 24 foreign countries and includes the analyses from 1976 publication. The latest of these compilations was published in 1987 and contains 14,242 analyses made prior to 1986, including the analyses from the 1976 and 1982 publications. The samples were taken from wells or pipelines in 40 States and 24 foreign countries (31).

In addition to being in the publications, all analyses and related information published through 1987 are available on a magnetic tape file. The tape is available for \$200 from the National Technical Information Service, Springfield, VA 22161, telephone (703) 487-4650; orders should refer to Bureau of Mines tape PB 88-172325.

The helium survey program is conducted by soliciting natural gas samples throughout the United States and other countries with free market economies. Without the assistance of the petroleum industry, State and Federal agencies, and many individuals engaged in oil and gas exploration and production, the helium survey in its present scope would not be possible.

GEOLOGIC PROVINCES OF THE UNITED STATES

The tables include geologic province codes so each sample source can be located within a specific geologic province as defined by the Committee on Statistics of Drilling of the American Association of Petroleum Geologists.⁴ These provinces, which are given in the following list and shown in figure 1, are

³Underlined numbers in parentheses refer to items in the list of previous publications at the end of this report.

⁴Meyer, R. F. Geologic Provinces Code Map for Computer Use. AAPG Bull., v. 54, No. 7, July 1970, pp. 1301-1305.

delineated by political boundaries for convenience and for accommodation of data processing equipment. Not all of the provinces shown are gas-producing areas, so many of the codes are not used in this publication. Since State or Federal ownership is not always known in offshore areas, only one code is used for each State. Owing to the lack of information on the location of wells in Alaska, only one code, 972, is used for all wells.

The following list and figure 1 are taken from the article cited in footnote 4.

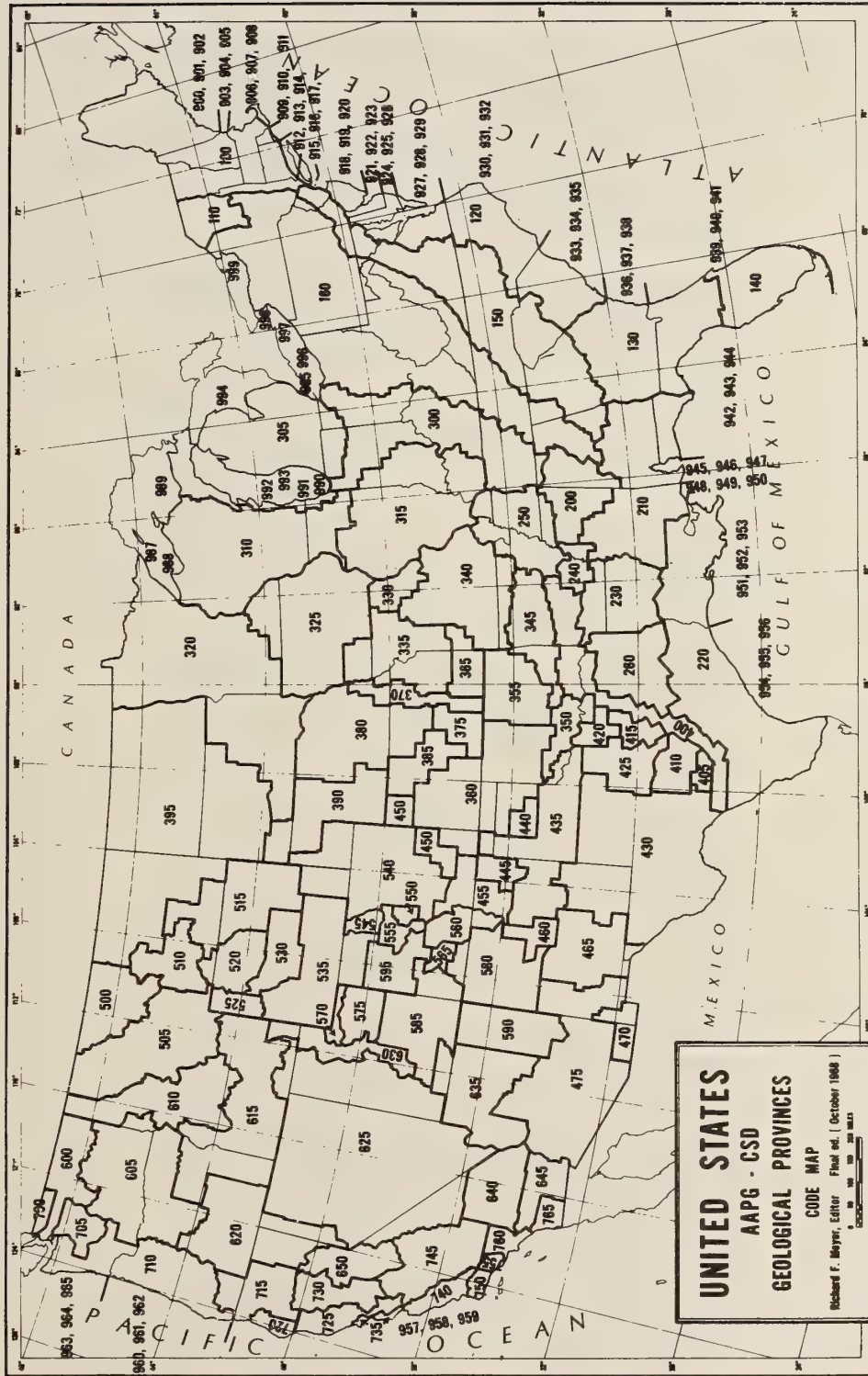


FIGURE 1. - Geologic provinces of the United States.

<u>Code</u>	<u>Province</u>
100	New England Province
110	Adirondack Uplift
120	Atlantic Coast Basin
130	South Georgia-North Florida Sedimentary Province
140	South Florida Province
150	Piedmont-Blue Ridge Province
160	Appalachian Basin
200	Warrior Basin
210	Mid-Gulf Coast Basin
220	Gulf Coast Basin
230	Arkla Basin
240	Desha Basin
250	Upper Mississippi Embayment
260	East Texas Basin
300	Cincinnati Arch
305	Michigan Basin
310	Wisconsin Arch
315	Illinois Basin
320	Sioux Uplift
325	Iowa Shelf
330	Lincoln Anticline
335	Forest City Basin
340	Ozark Uplift
345	Arkoma Basin
350	South Oklahoma Folded Belt Province
355	Chautauqua Platform
360	Anadarko Basin
365	Cherokee Basin
370	Nemaha Anticline
375	Sedgwick Basin
380	Salina Basin
385	Central Kansas Uplift
390	Chadron Arch
395	Williston Basin
400	Ouachita Tectonic Belt Province
405	Kerr Basin
410	Llano Uplift
415	Strawn Basin
420	Fort Worth Syncline
425	Bend Arch
430	Permian Basin
435	Palo Duro Basin
440	Amarillo Arch
445	Sierra Grande Uplift
450	Las Animas Arch
455	Las Vegas-Raton Basin
460	Estancia Basin
465	Orogrande Basin
470	Pedregosa Basin
475	Basin-and-Range Province

<u>Code</u>	<u>Province</u>
500	Sweetgrass Arch
505	Montana Folded Belt Province
510	Central Montana Uplift
515	Powder River Basin
520	Big Horn Basin
525	Yellowstone Province
530	Wind River Basin
535	Green River Basin
540	Denver Basin
545	North Park Basin
550	South Park Basin
555	Eagle Basin
560	San Luis Basin
565	San Juan Mountain Province
570	Uinta Uplift
575	Uinta Basin
580	San Juan Basin
585	Paradox Basin
590	Black Mesa Basin
595	Piceance Basin
600	Northern Cascade Range--Okanagan Province
605	Eastern Columbia Basin
610	Idaho Mountains Province
615	SNAKE River Basin
620	Southern Oregon Basin
625	Great Basin Province
630	Wasatch Uplift
635	Plateau Sedimentary Province
640	Mojave Basin
645	Salton Basin
650	Sierra Nevada Province
700	Bellingham Basin
705	Puget Sound Province
710	Western Columbia Basin
715	Klamath Mountains Province
720	Eel River Basin
725	Northern Coast Range Province
730	Sacramento Basin
735	Santa Cruz Basin
740	Coastal Basins
745	San Joaquin Basin
750	Santa Maria Basin
755	Ventura Basin
760	Los Angeles Basin
765	Capistrano Basin
800	Heceta Island Area
805	Keku Islands Area
810	Gulf of Alaska Basin
815	Copper River Basin
820	Cook Inlet Basin

<u>Code</u>	<u>Province</u>
830	Kandik Province
835	Kobuk Province
840	Koyukuk Province
845	Bristol Bay Basin
850	Bethel Basin
855	Norton Basin
860	Selawik Basin
863	Yukon Flats Basin
865	Lower Tanana Basin
867	Middle Tanana Basin
870	Upper Tanana Basin
873	Galena Basin
875	Innoko Basin
877	Minchumina Basin
880	Holitna Basin
885	Arctic Foothills Province
890	Arctic Slope Basin
900	Maine Atlantic offshore--general
901	Maine Atlantic offshore--State
902	Maine Atlantic offshore--Federal
903	New Hampshire Atlantic offshore--general
904	New Hampshire Atlantic offshore--State
905	New Hampshire Atlantic offshore--Federal
906	Massachusetts Atlantic offshore--general
907	Massachusetts Atlantic offshore--State
908	Massachusetts Atlantic offshore--Federal
909	Rhode Island Atlantic offshore--general
910	Rhode Island Atlantic offshore--State
911	Rhode Island Atlantic offshore--Federal
912	Connecticut Atlantic offshore--general
913	Connecticut Atlantic offshore--State
914	Connecticut Atlantic offshore--Federal
915	New York Atlantic offshore--general
916	New York Atlantic offshore--State
917	New York Atlantic offshore--Federal
918	New Jersey Atlantic offshore--general
919	New Jersey Atlantic offshore--State
920	New Jersey Atlantic offshore--Federal
921	Delaware Atlantic offshore--general
922	Delaware Atlantic offshore--State
923	Delaware Atlantic offshore--Federal
924	Maryland Atlantic offshore--general
925	Maryland Atlantic offshore--State
926	Maryland Atlantic offshore--Federal
927	Virginia Atlantic offshore--general
928	Virginia Atlantic offshore--State
929	Virginia Atlantic offshore--Federal
930	North Carolina Atlantic offshore--general
931	North Carolina Atlantic offshore--State
932	North Carolina Atlantic offshore--Federal
933	South Carolina Atlantic offshore--general
934	South Carolina Atlantic offshore--State

<u>Code</u>	<u>Province</u>
935	South Carolina Atlantic offshore--Federal
936	Georgia Atlantic offshore--general
937	Georgia Atlantic offshore--State
938	Georgia Atlantic offshore--Federal
939	Florida Atlantic offshore--general
940	Florida Atlantic offshore--State
941	Florida Atlantic offshore--Federal
942	Florida Gulf of Mexico offshore--general
943	Florida Gulf of Mexico offshore--State
944	Florida Gulf of Mexico offshore--Federal
945	Alabama Gulf of Mexico offshore--general
946	Alabama Gulf of Mexico offshore--State
947	Alabama Gulf of Mexico offshore--Federal
948	Mississippi Gulf of Mexico offshore--general
949	Mississippi Gulf of Mexico offshore--State
950	Mississippi Gulf of Mexico offshore--Federal
951	Louisiana Gulf of Mexico offshore--general
952	Louisiana Gulf of Mexico offshore--State
953	Louisiana Gulf of Mexico offshore--Federal
954	Texas Gulf of Mexico offshore--general
955	Texas Gulf of Mexico offshore--State
956	Texas Gulf of Mexico offshore--Federal
957	California Pacific offshore--general
958	California Pacific offshore--State
959	California Pacific offshore--Federal
960	Oregon Pacific offshore--general
961	Oregon Pacific offshore--State
962	Oregon Pacific offshore--Federal
963	Washington Pacific offshore--general
964	Washington Pacific offshore--State
965	Washington Pacific offshore--Federal
972	Alaska Arctic offshore--general
973	Alaska Arctic offshore--State
974	Alaska Arctic offshore--Federal
975	Alaska Bering Sea offshore--general
976	Alaska Bering Sea offshore--State
977	Alaska Bering Sea offshore--Federal
978	Alaska Pacific offshore--general
979	Alaska Pacific offshore--State
980	Alaska Pacific offshore--Federal
987	Minnesota Lake Superior offshore
988	Wisconsin Lake Superior offshore
989	Michigan Lake Superior offshore
990	Indiana Lake Michigan offshore
991	Illinois Lake Michigan offshore
992	Wisconsin Lake Michigan offshore
993	Michigan Lake Michigan offshore
994	Michigan Lake Huron offshore
995	Michigan Lake Erie offshore
996	Ohio Lake Erie offshore
997	Pennsylvania Lake Erie offshore
998	New York Lake Erie offshore
999	New York Lake Ontario offshore

TABLES

The following tables include the results of analyses and related source data from gas samples, which are divided into three groups as follows:

Table 1. - Samples from gas and oil wells in the United States.

Table 2. - Samples from pipelines in the United States.

Table 3. - Samples from gas and oil wells in foreign countries.

The following list indicates the sources of the samples listed in the tables:

Source	Number of samples	Tables	Source	Number of samples	Tables
Alabama.....	4	1	New York.....	4	1
Arkansas.....	19	1, 2	North Dakota.....	2	1
California.....	1	1	Ohio.....	1	2
Colorado.....	9	1	Oklahoma.....	45	1
Idaho.....	2	1	Pennsylvania.....	3	1, 2
Kansas.....	11	1	Tennessee.....	1	1
Kentucky.....	1	1	Texas.....	38	1, 2
Louisiana.....	6	1	Utah.....	3	1
Michigan.....	5	1	West Virginia.....	6	1, 2
Mississippi.....	7	1	Wyoming.....	5	1
Montana.....	1	1			
New Mexico.....	12	1	Canada.....	5	3

All components of the analyses in the tables are reported to the nearest 0.1%, except helium, which is reported to the nearest 0.01%. The word "Trace" is used to denote quantities of helium of less than 0.005% and quantities of other components of less than 0.05%.

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18360	INDEX SAMPLE 18237	INDEX SAMPLE 18276
STATE.....	ALABAMA	ALABAMA	ALABAMA
COUNTY.....	BALDWIN	FAYETTE	LAMAR
FIELD.....	GULF STATE PARK	TANYARD CREEK W	CORINTH
WELL NAME.....	GULF STATE PARK 12-10 NO. 1	U.S. STEEL 31-13 NO. 1	MCDONALD NO. 36-13
LOCATION.....	SEC. 12, T9S, R4E	SEC. 31, T14S, R10W	SEC. 36, T14S, R14W
OWNER.....	HUGHES EASTERN CORP.	TXO PRODUCTION CORP.	TERRA RESOURCES, INC.
COMPLETED.....	--/--/84	--/--/86	06/03/86
SAMPLED.....	04/28/87	10/20/86	11/25/86
FORMATION.....	MIOC-MEYER	MISS-CARTER	MISS-CARTER
GEOLOGIC PROVINCE CODE...	210	200	200
DEPTH, FEET.....	1280	2359	2674
WELLHEAD PRESSURE, PSIG...	305	NOT GIVEN	697
OPEN FLOW, MCFD.....	600	1970	9349
COMPONENT, MOLE PCT			
METHANE.....	93.1	95.7	96.6
ETHANE.....	0.0	1.9	2.3
PROPANE.....	TRACE	0.3	0.1
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.0	0.1	0.1
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	5.8	1.5	0.7
OXYGEN.....	0.7	0.1	TRACE
ARGON.....	0.1	0.0	TRACE
HYDROGEN.....	TRACE	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.1	0.1
HELIUM.....	0.01	0.10	0.05
HEATING VALUE*.....	944	1015	1026
SPECIFIC GRAVITY.....	0.585	0.575	0.572

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18458	INDEX SAMPLE 18364	INDEX SAMPLE 18452
STATE.....	ALABAMA	ARKANSAS	ARKANSAS
COUNTY.....	LAMAR	CRAWFORD	FRANKLIN
FIELD.....	MOUNT CARMEL	SHIBLEY	AETNA
WELL NAME.....	HODO 31-15 NO. 1	MECHLING "A" NO. 1-26	DAVID PILE NO. 3-T
LOCATION.....	SEC. 31, T17S, R14W	SEC. 26, T9N, R31W	SEC. 19, T8N, R27W
OWNER.....	HOWELL PETROLEUM CORP.	ANADARKO PETROLEUM CORP.	ARKOMA PRODUCTION CO.
COMPLETED.....	--/--/87	02/04/87	07/02/87
SAMPLED.....	07/25/87	05/04/87	09/30/87
FORMATION.....	MISS-CARTER	PERM-ALMA	PENN-ARECI & DUNN C
GEOLOGIC PROVINCE CODE...	200	345	345
DEPTH, FEET.....	4375	1390	6910
WELLHEAD PRESSURE, PSIG...	1260	75	962
OPEN FLOW, MCFD.....	670	1000	1700
COMPONENT, MOLE PCT			
METHANE.....	91.7	95.2	98.0
ETHANE.....	5.7	0.9	1.1
PROPANE.....	0.0	0.1	0.3
N-BUTANE.....	0.3	0.0	0.0
ISOBUTANE.....	0.0	TRACE	TRACE
N-PENTANE.....	0.4	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.0
CYCLOPENTANE.....	0.2	0.0	0.0
HEXANES PLUS.....	0.2	0.0	0.0
NITROGEN.....	0.8	2.9	0.4
OXYGEN.....	0.1	0.7	0.4
ARGON.....	TRACE	TRACE	TRACE
HYDROGEN.....	0.0	0.1	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.6	TRACE	0.1
HELIUM.....	0.06	0.08	0.10
HEATING VALUE*.....	1075	985	1021
SPECIFIC GRAVITY.....	0.612	0.575	0.565

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18495	INDEX SAMPLE 18373	INDEX SAMPLE 18485
STATE.....	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY.....	FRANKLIN	FRANKLIN	FRANKLIN
FIELD.....	AETNA	ROCK CREEK	URSULA
WELL NAME.....	WIEDERKEHR-SWIFT NO. 1-32	FEDERAL NO. 1-2	CARTWRIGHT "D" NO. 1-T
LOCATION.....	SEC. 32, T9N, R26W	SEC. 2, T11N, R26W	SEC. 27, T8N, R29W
OWNER.....	SEECO, INC.	KANEB OPERATING CO., LTD.	TXO PRODUCTION CORP.
COMPLETED.....	07/29/87	02/17/86	10/21/87
SAMPLED.....	12/04/87	05/27/87	10/24/87
FORMATION.....	ORDO-JENKINS	PENN-BARTON R & HALE M	PENN-HALE M
GEOLOGIC PROVINCE CODE...	345	345	345
DEPTH, FEET.....	4878	1992	7452
WELLHEAD PRESSURE, PSIG...	438	677	NOT GIVEN
OPEN FLOW, MCFD.....	5477	3237	4000
COMPONENT, MOLE PCT			
METHANE.....	97.6	96.3	95.9
ETHANE.....	1.3	1.7	1.3
PROPANE.....	0.2	0.4	0.2
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	TRACE	0.2	TRACE
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	0.3	1.1	0.4
OXYGEN.....	0.0	0.0	TRACE
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	0.0	0.1	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.5	0.1	2.2
HELIUM.....	0.05	0.11	0.07
HEATING VALUE*.....	1018	1024	999
SPECIFIC GRAVITY.....	0.569	0.575	0.585

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 10 18486	INDEX SAMPLE 11 18487	INDEX SAMPLE 12 18488
STATE.....	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY.....	FRANKLIN	FRANKLIN	FRANKLIN
FIELD.....	URSULA	URSULA	URSULA
WELL NAME.....	CARTWRIGHT "D" NO. 1-C	MOORE "U" NO. 1-C	MOORE "U" NO. 1-T
LOCATION.....	SEC. 27, T8N, R29W	SEC. 34, T8N, R29W	SEC. 34, T8N, R29W
OWNER.....	TXO PRODUCTION CORP.	TXO PRODUCTION CORP.	TXO PRODUCTION CORP.
COMPLETED.....	10/21/87	10/21/87	10/21/87
SAMPLED.....	11/24/87	11/24/87	11/24/87
FORMATION.....	PENN-DUNN C	PENN-CARPENTER L	PENN-HALE M
GEOLOGIC PROVINCE CODE.....	345	345	345
DEPTH, FEET.....	6419	2995	2995
WELLHEAD PRESSURE, PSIG.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD.....	1300	1835	1840
COMPONENT, MOLE PCT			
METHANE.....	85.2	94.9	96.6
ETHANE.....	0.9	1.2	1.2
PROPANE.....	0.2	0.1	0.1
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	TRACE	TRACE	TRACE
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	12.5	3.6	0.3
OXYGEN.....	0.0	TRACE	0.0
ARGON.....	TRACE	TRACE	0.0
HYDROGEN.....	0.0	0.0	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.1	0.1	1.7
HELIUM.....	0.12	0.09	0.07
HEATING VALUE*.....	884	987	1004
SPECIFIC GRAVITY.....	0.623	0.577	0.580

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18318	INDEX SAMPLE 18319	INDEX SAMPLE 18320
STATE.....	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY.....	LOGAN	LOGAN	LOGAN
FIELD.....	BASHAM	FLETCHER CREEK	FLETCHER CREEK
WELL NAME.....	ANDERSON "R" NO. 1	HARWELL "A" NO. 1	FOSTER "F" NO. 1
LOCATION.....	SEC. 24, T5N, R28W	SEC. 23, T5N, R28W	SEC. 29, T5N, R28W
OWNER.....	TXO PRODUCTION CORP.	TXO PRODUCTION CORP.	TXO PRODUCTION CORP.
COMPLETED.....	01/09/86	08/07/85	07/12/85
SAMPLED.....	02/17/87	02/17/87	02/17/87
FORMATION.....	PENN-TURNER L	PERM-BASHAM	PERM-BASHAM
GEOLOGIC PROVINCE CODE.....	345	345	345
DEPTH, FEET.....	4288	4775	6436
WELLHEAD PRESSURE, PSIG.....	1780	16450	1500
OPEN FLOW, MCFD.....	1400	3300	2950
COMPONENT, MOLE PCT			
METHANE.....	88.2	97.3	94.5
ETHANE.....	1.4	1.4	1.6
PROPANE.....	0.2	0.2	0.2
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.1	TRACE	TRACE
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	9.8	0.5	2.5
OXYGEN.....	0.0	0.0	0.0
ARGON.....	TRACE	0.0	0.0
HYDROGEN.....	0.1	0.1	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	0.5	1.0
HELIUM.....	0.06	0.07	0.08
HEATING VALUE*.....	927	1016	991
SPECIFIC GRAVITY.....	0.608	0.570	0.583

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18400	INDEX SAMPLE 18303	INDEX SAMPLE 18325
STATE.....	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY.....	LOGAN	POPE	POPE
FIELD.....	PRAIRIE VIEW	FERGERSON	KNOXVILLE
WELL NAME.....	SPICER NO. 1-21	BLAIR-LAWS "A" NO. 4-1	SMITH NO. 1-12
LOCATION.....	SEC. 21, T8N, R2W	SEC. 4, T8N, R20W	SEC. 12, T8N, R21W
OWNER.....	SANTA FE ENERGY CO.	KANEB OPERATING CO., LTD.	CNG PRODUCING CO.
COMPLETED.....	10/09/85	03/01/84	05/--/85
SAMPLED.....	07/14/87	--/--/87	03/09/87
FORMATION.....	PENN-HALE	NOT GIVEN	PENN-DUNN A
GEOLOGIC PROVINCE CODE...	345	345	345
DEPTH, FEET.....	7348	6205	4340
WELLHEAD PRESSURE, PSIG...	700	1883	668
OPEN FLOW, MCFD.....	300	3514	5000
COMPONENT, MOLE PCT			
METHANE.....	92.2	96.9	95.9
ETHANE.....	1.1	1.1	0.9
PROPANE.....	0.2	0.2	0.1
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	TRACE	TRACE	0.0
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	TRACE	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	1.1	0.6	1.6
OXYGEN.....	0.1	TRACE	0.2
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	0.2	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	4.8	0.9	1.1
HELIUM.....	0.10	0.12	0.23
HEATING VALUE*.....	961	1007	991
SPECIFIC GRAVITY.....	0.613	0.572	0.578

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18498	INDEX SAMPLE 18271	INDEX SAMPLE 18428
STATE.....	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY.....	SEBASTIAN	SEBASTIAN	SEBASTIAN
FIELD.....	CECIL	CHISMVILLE	GRAGG
WELL NAME.....	C. WRIGHT NO. 2-B	FT. CHAFFEE NO. 2	LYDA "B" NO. 2-C
LOCATION.....	SEC. 36, T9N, R30W	SEC. 13, T6N, R29W	SEC. 22, T6N, R29W
OWNER.....	ARKOMA PRODUCTION CO.	EXXON CO., U.S.A.	HANNA OIL & GAS CO.
COMPLETED.....	09/04/87	05/19/86	05/23/87
SAMPLED.....	12/10/87	11/19/86	08/25/87
FORMATION.....	PENN-CARPENTER	PENN-NICHOLS & TURNER	PENN-BORUM
GEOLOGIC PROVINCE CODE.....	345	345	345
DEPTH, FEET.....	1660	3365	5773
WELLHEAD PRESSURE, PSIG.....	150	919	NOT GIVEN
OPEN FLOW, MCFD.....	1400	2581	6997
COMPONENT, MOLE PCT			
METHANE.....	98.2	93.2	92.1
ETHANE.....	1.1	1.3	1.4
PROPANE.....	0.1	0.1	0.2
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.0	TRACE	TRACE
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	TRACE
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	0.4	4.7	4.6
OXYGEN.....	0.0	0.2	1.1
ARGON.....	0.0	0.1	0.1
HYDROGEN.....	TRACE	0.1	0.4
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	TRACE	0.3	TRACE
HELIUM.....	0.09	0.06	0.07
HEATING VALUE*.....	1018	970	966
SPECIFIC GRAVITY.....	0.563	0.586	0.587

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18429	INDEX SAMPLE 18499	INDEX SAMPLE 18469
STATE.....	ARKANSAS	CALIFORNIA	COLORADO
COUNTY.....	SEBASTIAN	SOLANO	GARFIELD
FIELD.....	GRAGG	MAINE PRAIRIE	WILDCAT
WELL NAME.....	LYDA "B" NO. 2-T	ZANETTI NO. 1	ARCO DEEP NO. 1-27
LOCATION.....	SEC. 22, T6N, R29W	SEC. 23, T6N, R2E	SEC. 27, T6S, R97W
OWNER.....	HANNA OIL & GAS CO.	AMERADA HESS CORP.	BARRETT ENERGY CO.
COMPLETED.....	05/23/87	08/25/87	08/15/87
SAMPLED.....	08/25/87	12/14/87	11/03/87
FORMATION.....	PENN-BORUM	PERM-MOKELUMNE	CRET-CAMEO
GEOLOGIC PROVINCE CODE...	345	730	595
DEPTH, FEET.....	5773	5333	8149
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	1600	2600
OPEN FLOW, MCFD.....	6997	1200	1300
COMPONENT, MOLE PCT			
METHANE.....	92.0	94.2	87.1
ETHANE.....	1.4	3.0	3.0
PROPANE.....	0.2	0.2	0.4
N-BUTANE.....	0.0	0.0	0.2
ISOBUTANE.....	TRACE	0.1	0.1
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	TRACE	TRACE	0.2
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	2.5	2.5	0.1
OXYGEN.....	0.6	0.0	0.1
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	0.3	0.0	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	2.8	0.1	8.9
HELIUM.....	0.07	TRACE	TRACE
HEATING VALUE*.....	966	1017	964
SPECIFIC GRAVITY.....	0.604	0.584	0.669

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18433	INDEX SAMPLE 18362	INDEX SAMPLE 18301
STATE.....	COLORADO	COLORADO	COLORADO
COUNTY.....	LA PLATA	MOFFAT	MONTEZUMA
FIELD.....	IGNACIO-BLANCO	DANFORTH HILLS	MCELMO
WELL NAME.....	FARMER NO. 1	GOVT.-TRELEAVEN NO. 11	DEAN DUDLEY NO. 4
LOCATION.....	SEC. 15, T32N, R11W	SEC. 31, T5N, R9SW	SEC. 13, T36N, R18W
OWNER.....	UNION TEXAS PETROLEUM CORP.	TEXACO INC.	AMERIGAS, INC.
COMPLETED.....	01/14/84	07/24/86	--/--/87
SAMPLED.....	09/04/87	04/29/87	02/12/87
FORMATION.....	CRET-CLIFF HOUSE & MENESEE	PENN-MINTURN	TRIA-SHINARUMP
GEOLOGIC PROVINCE CODE...	580	535	585
DEPTH, FEET.....	4784	9698	1725
WELLHEAD PRESSURE, PSIG...	900	2486	300
OPEN FLOW, MCFD.....	1318	1760	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	83.0	68.4	56.0
ETHANE.....	9.2	9.5	4.7
PROPANE.....	3.9	4.4	1.5
N-BUTANE.....	1.1	2.1	0.4
ISOBUTANE.....	0.3	0.0	0.7
N-PENTANE.....	0.4	0.4	0.0
ISOPENTANE.....	0.1	0.0	0.2
CYCLOPENTANE.....	0.1	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.1
NITROGEN.....	0.4	11.3	34.8
OXYGEN.....	0.0	0.1	TRACE
ARGON.....	0.0	0.7	0.1
HYDROGEN.....	0.0	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.2	2.6	0.3
HELIUM.....	TRACE	0.25	1.06
HEATING VALUE*.....	1192	1066	741
SPECIFIC GRAVITY.....	0.691	0.763	0.758

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18302	INDEX SAMPLE 18299	INDEX SAMPLE 18300
STATE.....	COLORADO	COLORADO	COLORADO
COUNTY.....	MONTEZUMA	MONTEZUMA	MONTEZUMA
FIELD.....	MCELMO	MCELMO DOME UNIT	MCELMO DOME UNIT
WELL NAME.....	SCHMIDT NO. 3	DEAN DUDLEY NO. 3	SCHMIDT NO. 2
LOCATION.....	SEC. 24, T36N, R18W	SEC. 13, T36N, R28W	SEC. 24, T36N, R18W
OWNER.....	AMERIGAS, INC.	AMERIGAS, INC.	AMERIGAS, INC.
COMPLETED.....	--/--/87	--/--/87	--/--/87
SAMPLED.....	02/12/87	02/12/87	02/12/87
FORMATION.....	TRIA-SHINARUMP	MISS-LEADVILLE	MISS-LEADVILLE
GEOLOGIC PROVINCE CODE...	585	585	585
DEPTH, FEET.....	1725	6700	6700
WELLHEAD PRESSURE, PSIG...	300	900	900
OPEN FLOW, MCFD.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	55.3	0.1	0.1
ETHANE.....	5.0	0.0	0.0
PROPANE.....	1.7	0.0	0.0
N-BUTANE.....	0.3	0.0	0.0
ISOBUTANE.....	0.6	0.1	0.1
N-PENTANE.....	0.1	0.0	0.0
ISOPENTANE.....	0.1	TRACE	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	34.9	2.0	1.9
OXYGEN.....	0.0	0.1	TRACE
ARGON.....	0.1	TRACE	TRACE
HYDROGEN.....	0.1	0.0	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.6	97.5	97.6
HELIUM.....	1.03	0.10	0.09
HEATING VALUE*.....	738	4	5
SPECIFIC GRAVITY.....	0.762	1.514	1.513

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18363	INDEX SAMPLE 18445	INDEX SAMPLE 18457
STATE.....	COLORADO	COLORADO	IDAHO
COUNTY.....	RIO BLANCO	WELD	CASSIA
FIELD.....	GREATER DOUGLAS CREEK ARCH	ARISTOCRAT	NOT GIVEN
WELL NAME.....	FORK UNIT NO. 14-14-1-2	GUN CLUB UPRR NO. 41-3	BRIDGE SPRING
LOCATION.....	SEC. 14, T1S, R102W	SEC. 3, T3N, R65W	T1SS, R26E
OWNER.....	CHANDLER & ASSOCIATES, INC.	BASIN EXPLORATION, INC.	CRAFTS, MARK
COMPLETED.....	03/12/85	10/10/86	--/--/87
SAMPLED.....	05/04/87	09/24/87	10/18/87
FORMATION.....	CRET-MANCOS B	CRET-CODELL & NIOBRARA	NOT GIVEN
GEOLOGIC PROVINCE CODE...	560	540	625
DEPTH, FEET.....	2350	6783	NOT GIVEN
WELLHEAD PRESSURE, PSIG...	214	3900	NOT GIVEN
OPEN FLOW, MCFD.....	175	1354	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	80.3	73.7	0.4
ETHANE.....	6.2	13.9	0.1
PROPANE.....	3.8	5.4	0.0
N-BUTANE.....	1.1	1.9	0.0
ISOBUTANE.....	0.9	0.7	TRACE
N-PENTANE.....	0.2	0.6	0.0
ISOPENTANE.....	0.3	0.1	0.1
CYCLOPENTANE.....	TRACE	0.1	0.0
HEXANES PLUS.....	0.2	0.2	0.0
NITROGEN.....	5.6	0.3	93.2
OXYGEN.....	1.0	TRACE	0.1
ARGON.....	TRACE	TRACE	2.0
HYDROGEN.....	0.0	0.0	0.1
HYDROGEN SULFIDE**.....	0.0	TRACE	0.0
CARBON DIOXIDE.....	0.2	3.1	3.8
HELIUM.....	0.12	TRACE	0.17
HEATING VALUE*.....	1124	1265	11
SPECIFIC GRAVITY.....	0.699	0.768	0.995

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 34 18456	INDEX SAMPLE 35 18354	INDEX SAMPLE 36 18390
STATE.....	IDAHO	KANSAS	KANSAS
COUNTY.....	FRANKLIN	BARBER	BARBER
FIELD.....	NOT GIVEN	AMBER HILLS EXT.	MCGUIRE-GOEMANN EXT.
WELL NAME.....	SQUAW HOT SPRINGS	PIKE NO. 1	SCRIPSICK NO. 2
LOCATION.....	T15S, R39E	SEC. 9, T31S, R12W	SEC. 18, T32S, R10W
OWNER.....	CRAFTS, MARK	SOURCE PETROLEUM	BRADEN-DEEM, INC.
COMPLETED.....	--/--/87	07/21/86	01/--/86
SAMPLED.....	10/12/87	04/22/87	06/27/87
FORMATION.....	NOT GIVEN	PENN-MISS	PENN-CHEROKEE
GEOLOGIC PROVINCE CODE...	625	375	375
DEPTH, FEET.....	NOT GIVEN	4400	4363
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	1537	1200
OPEN FLOW, MCFD.....	NOT GIVEN	750	2519
COMPONENT, MOLE PCT			
METHANE.....	1.0	78.6	90.4
ETHANE.....	0.2	6.0	4.3
PROPANE.....	0.0	3.1	2.1
N-BUTANE.....	0.3	0.8	0.4
ISOBUTANE.....	0.0	0.4	0.6
N-PENTANE.....	0.0	0.2	0.0
ISOPENTANE.....	0.4	0.2	0.1
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.0	0.1	0.0
NITROGEN.....	4.2	6.7	2.0
OXYGEN.....	0.2	TRACE	0.0
ARGON.....	0.1	TRACE	0.0
HYDROGEN.....	0.0	0.1	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	93.5	3.1	0.1
HELIUM.....	0.05	0.50	0.10
HEATING VALUE*.....	42	1051	1083
SPECIFIC GRAVITY.....	1.499	0.700	0.621

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18351	INDEX SAMPLE 18477	INDEX SAMPLE 18289
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	COMANCHE	COMANCHE	HARPER
FIELD.....	NESCATUNGA S	NOT GIVEN	SULLIVAN
WELL NAME.....	KIMBLE NO. 1	BOOTH NO. 1	KISER NO. 2
LOCATION.....	SEC. 35, T32S, R28W	SEC. 23, T32S, R17W	SEC. 36, T32S, R9W
OWNER.....	AMERICAN ENERGIES CORP.	MIDCO EXPLORATION, INC.	KBW OIL & GAS CO.
COMPLETED.....	07/06/84	09/30/84	11/14/86
SAMPLED.....	04/19/87	11/13/87	01/16/87
FORMATION.....	ORDO-VIOLA	PENN-MISS	PENN-WABAUNSEE
GEOLOGIC PROVINCE CODE...	360	360	375
DEPTH, FEET.....	5600	5124	3050
WELLHEAD PRESSURE, PSIG...	1620	NOT GIVEN	1150
OPEN FLOW, MCFD.....	1346	2464	1000
COMPONENT, MOLE PCT			
METHANE.....	77.7	92.9	79.7
ETHANE.....	5.7	3.5	3.4
PROPANE.....	2.7	1.2	2.8
N-BUTANE.....	0.7	0.5	0.9
ISOBUTANE.....	0.3	0.0	0.6
N-PENTANE.....	0.2	0.1	0.2
ISOPENTANE.....	0.1	0.3	0.2
CYCLOPENTANE.....	TRACE	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.1
NITROGEN.....	11.3	1.2	11.5
OXYGEN.....	TRACE	0.0	0.3
ARGON.....	0.1	TRACE	0.0
HYDROGEN.....	0.1	0.0	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	0.1	0.1
HELIUM.....	0.50	0.08	0.31
HEATING VALUE*.....	1011	1071	1014
SPECIFIC GRAVITY.....	0.680	0.606	0.682

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 40 18358	INDEX SAMPLE 41 18277	INDEX SAMPLE 42 18327
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	KIOWA	LEAVENWORTH	MEADE
FIELD.....	NICHOLS	LAMBORN	HOCKETT SE
WELL NAME.....	HIEBSH NO. 2	JONES ET AL NO. 1	HARRIS 34 NO. 1
LOCATION.....	SEC. 27, T29S, R28W	SEC. 14, T9S, R22E	SEC. 34, T31S, R29W
OWNER.....	VINCENT OIL CORP.	BERKY RESOURCES CORP.	COBRA OIL & GAS CORP.
COMPLETED.....	05/15/85	06/25/86	05/30/85
SAMPLED.....	04/25/87	11/28/86	03/11/87
FORMATION.....	PENN-MARMATON	PENN-BURGESS	MISS-CHESTER
GEOLOGIC PROVINCE CODE...	360	335	360
DEPTH, FEET.....	4800	1196	5564
WELLHEAD PRESSURE, PSIG...	1050	420	1500
OPEN FLOW, MCFD.....	1250	520	10900
COMPONENT, MOLE PCT			
METHANE.....	72.0	96.2	84.1
ETHANE.....	5.8	0.0	0.8
PROPANE.....	5.1	0.2	0.1
N-BUTANE.....	3.6	0.0	0.0
ISOBUTANE.....	0.0	0.2	TRACE
N-PENTANE.....	1.2	0.0	0.0
ISOPENTANE.....	0.0	TRACE	0.0
CYCLOPENTANE.....	0.1	0.0	0.0
HEXANES PLUS.....	0.2	0.0	0.0
NITROGEN.....	6.6	2.0	10.6
OXYGEN.....	TRACE	0.1	2.7
ARGON.....	1.0	TRACE	0.1
HYDROGEN.....	0.1	0.1	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.1
CARBON DIOXIDE.....	4.1	1.1	1.4
HELIUM.....	0.16	0.11	0.14
HEATING VALUE*.....	1156	987	870
SPECIFIC GRAVITY.....	0.794	0.578	0.633

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18424	INDEX SAMPLE 18288	INDEX SAMPLE 18440
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	MORTON	RICE	SEWARD
FIELD.....	WINTER N	CHASE-SILICA	NOT GIVEN
WELL NAME.....	SANTA FE NO. 2-14	COLDWATER "C" NO. 1	COVEL TRUST NO. 1-24
LOCATION.....	SEC. 14, T33S, R43W	SEC. 17, T20S, R9W	SEC. 24, T31S, R32W
OWNER.....	SANTA FE ENERGY CO.	HIEBERT & WEDEL OIL PROP.	ENSIGN OPERATING CO.
COMPLETED.....	07/10/85	07/15/86	02/24/87
SAMPLED.....	08/--/87	01/13/87	09/09/87
FORMATION.....	PENN-MORROW	PENN-TARKIO	PENN-MORROW
GEOLOGIC PROVINCE CODE.....	360	385	360
DEPTH, FEET.....	4582	2236	5475
WELLHEAD PRESSURE, PSIG.....	379	675	1219
OPEN FLOW, MCFD.....	2017	710	1503
COMPONENT, MOLE PCT			
METHANE.....	70.7	64.0	72.3
ETHANE.....	8.6	2.1	5.2
PROPANE.....	6.6	1.9	2.6
N-BUTANE.....	1.4	0.6	0.9
ISOBUTANE.....	0.7	0.8	0.1
N-PENTANE.....	0.1	0.3	0.4
ISOPENTANE.....	0.5	0.0	0.1
CYCLOPENTANE.....	0.0	TRACE	0.1
HEXANES PLUS.....	0.0	0.2	0.2
NITROGEN.....	10.6	29.1	15.2
OXYGEN.....	0.0	0.1	2.4
ARGON.....	TRACE	0.1	0.1
HYDROGEN.....	0.3	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	TRACE	0.1
HELIUM.....	0.14	0.84	0.12
HEATING VALUE*.....	1139	805	962
SPECIFIC GRAVITY.....	0.752	0.734	0.715

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18401	INDEX SAMPLE 18361	INDEX SAMPLE 18404
STATE.....	KENTUCKY	LOUISIANA	LOUISIANA
COUNTY.....	HARLAN	CAMERON	CLAIBORNE
FIELD.....	LOONEY CREEK	GRAND LAKE	BLACKBURN
WELL NAME.....	PENN. VA. KY. RESOURCES NO.1	STATE LEASE 11728 NO. 1	A. B. TINSLEY ESTATE NO. 1
LOCATION.....	APPALACHIA QUAD., 18F, 80E	SEC. 36, T13S, R5W	SEC. 30, T22N, R7W
OWNER.....	ANR PRODUCTION CO.	HUNT OIL CO.	WHELESS INDUSTRIES, INC.
COMPLETED.....	07/01/86	02/28/86	11/05/86
SAMPLED.....	07/13/87	04/29/87	07/17/87
FORMATION.....	DEVO-WEIR SHALE	NOT GIVEN	JURA-COTTON VALLEY
GEOLOGIC PROVINCE CODE...	160	220	230
DEPTH, FEET.....	5692	15980	9206
WELLHEAD PRESSURE, PSIG...	909	6000	2600
OPEN FLOW, MCFD.....	1111	1500	1145
COMPONENT, MOLE PCT			
METHANE.....	75.6	81.8	72.0
ETHANE.....	10.7	7.3	13.9
PROPANE.....	3.4	3.7	7.1
N-BUTANE.....	0.7	2.3	1.9
ISOBUTANE.....	0.3	0.0	0.5
N-PENTANE.....	0.1	0.8	0.4
ISOPENTANE.....	0.3	0.0	0.4
CYCLOPENTANE.....	0.0	TRACE	0.0
HEXANES PLUS.....	0.1	0.2	0.2
NITROGEN.....	6.0	0.0	1.2
OXYGEN.....	1.5	0.0	0.0
ARGON.....	0.7	0.7	TRACE
HYDROGEN.....	0.4	0.1	0.2
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	3.0	2.0
HELIUM.....	0.04	TRACE	0.02
HEATING VALUE*.....	1104	1179	1292
SPECIFIC GRAVITY.....	0.705	0.719	0.776

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 49 18255	INDEX SAMPLE 50 18395	INDEX SAMPLE 51 18349
STATE.....	LOUISIANA	LOUISIANA	LOUISIANA
PARISH.....	JACKSON	JEFFERSON DAVIS	ST. MARTIN
FIELD.....	CLAY	LAKE ARTHUR	BAYOU CROOK CHENE
WELL NAME.....	KMI CONTINENTAL ROYALTY NO.1	FANNIE E. WINN NO. 1	DOW CHEMICAL CO. NO. 1
LOCATION.....	SEC. 33, T17N, R3W	SEC. 7, T11S, R3W	SEC. 34, T20S, R9E
OWNER.....	SUN EXPLORATION & PRODUCTION	POGO PRODUCING CO.	SANDEFER OIL & GAS CO.
COMPLETED.....	05/15/86	06/--/86	--/--/86.
SAMPLED.....	11/17/86	06/26/87	11/13/86
FORMATION.....	JURA-COTTON VALLEY & DAVIS	OLIG-MIOGYP	OLIG-MARGINULINA
GEOLOGIC PROVINCE CODE...	230	220	220
DEPTH, FEET.....	11154	16978	12860
WELLHEAD PRESSURE, PSIG...	8027	11000	6950
OPEN FLOW, MCFD.....	7219	45000	2041
COMPONENT, MOLE PCT			
METHANE.....	95.1	91.9	86.0
ETHANE.....	1.2	2.9	8.0
PROPANE.....	0.3	0.9	3.3
N-BUTANE.....	0.0	0.0	0.5
ISOBUTANE.....	0.2	0.5	0.6
N-PENTANE.....	0.0	0.0	0.1
ISOPENTANE.....	TRACE	0.0	TRACE
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.1
NITROGEN.....	0.2	0.5	0.8
OXYGEN.....	TRACE	0.0	TRACE
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	0.6	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	2.5	3.3	0.6
HELIUM.....	TRACE	TRACE	TRACE
HEATING VALUE*.....	1001	1022	1147
SPECIFIC GRAVITY.....	0.589	0.619	0.657

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18378	INDEX SAMPLE 18434	INDEX SAMPLE 18446
STATE.....	LOUISIANA	MICHIGAN	MICHIGAN
PARISH.....	WASHINGTON	ARENAC	MONTMORENCY
FIELD.....	ANGIE	CLAYTON	VIENNA
WELL NAME.....	O. ROBBINS NO. 1	SEIGNIOUS UNIT NO. 1-10	STATE VIENNA NO. 1-32
LOCATION.....	SEC. 52, T1S, R14E	SEC. 10, T20N, R4W	SEC. 32, T31N, R1E
OWNER.....	MOSBACHER ENERGY CO.	AMOCO PRODUCTION CO.	SHELL WESTERN EXP. & PROD.,
COMPLETED.....	--/--/86	10/21/87	12/11/86
SAMPLED.....	06/12/87	09/10/87	09/22/87
FORMATION.....	CRET-JAMES LIME	ORDO-PAIRIE DU CHIEN	SILU-NIAGARAN
GEOLOGIC PROVINCE CODE...	220	305	305
DEPTH, FEET.....	14466	10681	5931
WELLHEAD PRESSURE, PSIG...	5600	3854	2396
OPEN FLOW, MCFD.....	2900	1950	160142
COMPONENT, MOLE PCT			
METHANE.....	94.6	80.9	86.6
ETHANE.....	0.1	8.3	6.7
PROPANE.....	0.1	3.1	2.9
N-BUTANE.....	0.0	1.2	1.0
ISOBUTANE.....	0.1	0.5	0.7
N-PENTANE.....	0.0	0.6	0.4
ISOPENTANE.....	0.0	0.1	0.1
CYCLOPENTANE.....	0.0	0.1	0.1
HEXANES PLUS.....	0.0	0.3	0.2
NITROGEN.....	1.1	4.6	1.2
OXYGEN.....	0.0	0.0	0.1
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	TRACE	0.0	0.0
HYDROGEN SULFIDE*.....	0.0	0.0	0.0
CARBON DIOXIDE.....	4.0	0.2	0.1
HELIUM.....	0.02	0.04	0.02
HEATING VALUE*.....	965	1157	1162
SPECIFIC GRAVITY.....	0.600	0.697	0.663

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 55 18426	INDEX SAMPLE 56 18413	INDEX SAMPLE 57 18494
STATE.....	MICHIGAN	MICHIGAN	MICHIGAN
COUNTY.....	NEWAYGO	NEWAYGO	OAKLAND
FIELD.....	DENVER TOWNSHIP	HUBER	LYON S
WELL NAME.....	SCHROPP NO. 1-9	VANDERLEY & MILLS NO. 1-5A	RANDALL NO. 1-29
LOCATION.....	SEC. 19, T14N, R14W	SEC. 5, T14N, R14W	SEC. 29, T1N, R7E
OWNER.....	TERRA ENERGY, LTD.	TERRA ENERGY, LTD.	SOMOCO, INC.
COMPLETED.....	02/13/87	09/15/86	03/07/86
SAMPLED.....	08/25/87	07/25/87	12/07/87
FORMATION.....	SILU-CLINTON	ORDO-PRAIRIE DU CHIEN	SILU-NIAGARAN
GEOLOGIC PROVINCE CODE...	305	305	305
DEPTH, FEET.....	5325	6300	3577
WELLHEAD PRESSURE, PSIG...	1950	1900	NOT GIVEN
OPEN FLOW, MCFD.....	1200	9000	1000
COMPONENT, MOLE PCT			
METHANE.....	88.3	69.2	79.6
ETHANE.....	4.4	6.3	7.8
PROPANE.....	1.8	2.5	2.8
N-BUTANE.....	0.6	0.7	0.5
ISOBUTANE.....	0.5	0.6	0.9
N-PENTANE.....	0.2	0.5	0.0
ISOPENTANE.....	0.3	0.0	0.2
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.2	0.5	0.0
NITROGEN.....	1.6	17.9	7.9
OXYGEN.....	0.1	1.2	0.0
ARGON.....	1.0	0.1	0.0
HYDROGEN.....	0.4	0.2	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	TRACE	0.1	0.1
HELIUM.....	0.05	0.15	0.11
HEATING VALUE*.....	1098	973	1075
SPECIFIC GRAVITY.....	0.643	0.735	0.680

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 58 18292	INDEX SAMPLE 59 18470	INDEX SAMPLE 60 18380
STATE.....	MISSISSIPPI	MISSISSIPPI	MISSISSIPPI
COUNTY.....	COVINGTON	HOLMES	LEE
FIELD.....	MCRANEY	TCHULA LAKE	SHANNON
WELL NAME.....	JOSEPH DALE NO. 2	SHADRACH DAVIS, JR., NO. 1	WEST 25-4 NO. 1
LOCATION.....	SEC. 3, T7N, R17W	SEC. 8, T15N, R1W	SEC. 25, T11S, R5E
OWNER.....	UNION OIL CO. OF CALIFORNIA	TRIAD OIL & GAS CO.	MOON-HINES-TIGRETT OPERATING
COMPLETED.....	01/10/87	03/07/87	--/--/87
SAMPLED.....	01/28/87	07/15/87	06/17/87
FORMATION.....	CRET-HOSSTON & HARPER	JURA-SMACKOVER	MISS-CARTER
GEOLOGIC PROVINCE CODE.....	210	210	200
DEPTH, FEET.....	15296	9832	1517
WELLHEAD PRESSURE, PSIG.....	4325	2835	530
OPEN FLOW, MCFD.....	1000	4639	1240
COMPONENT, MOLE PCT			
METHANE.....	91.9	41.6	97.0
ETHANE.....	0.6	5.5	0.3
PROPANE.....	0.3	3.1	TRACE
N-BUTANE.....	0.1	2.0	0.0
ISOBUTANE.....	0.1	1.7	0.0
N-PENTANE.....	0.1	0.7	0.0
ISOPENTANE.....	0.2	0.6	0.0
CYCLOPENTANE.....	0.0	TRACE	0.0
HEXANES PLUS.....	0.0	0.3	0.0
NITROGEN.....	2.9	2.1	2.2
OXYGEN.....	0.0	0.0	TRACE
ARGON.....	TRACE	TRACE	0.0
HYDROGEN.....	0.1	TRACE	0.1
HYDROGEN SULFIDE*.....	0.0	0.0	0.0
CARBON DIOXIDE.....	3.7	42.3	0.2
HELIUM.....	0.04	0.01	0.12
HEATING VALUE*.....	969	796	990
SPECIFIC GRAVITY.....	0.617	1.122	0.567

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 61 18382	INDEX SAMPLE 62 18296	INDEX SAMPLE 63 18430
STATE.....	MISSISSIPPI	MISSISSIPPI	MISSISSIPPI
COUNTY.....	LEE	PERRY	WARREN
FIELD.....	SHANNON	TIGER	OAK RIDGE
WELL NAME.....	MARY RUTHERFORD NO. 1	MCLAURIN 4-13 NO. 1	BILLY BROWN 20-11 NO. 1
LOCATION.....	SEC. 17, T11S, R6E	SEC. 4, T5N, R10W	SEC. 20, T17W, R5E
OWNER.....	ENSOURCE, INC.	UNION OIL CO. OF CALIFORNIA	UNION OIL CO. OF CALIFORNIA
COMPLETED.....	--/--/87	07/29/77	09/11/80
SAMPLED.....	06/17/87	02/11/87	08/25/87
FORMATION.....	CRET-LEWIS	CRET-HOSSTON	CRET-RODESSA
GEOLOGIC PROVINCE CODE...	200	210	210
DEPTH, FEET.....	2058	14441	11260
WELLHEAD PRESSURE, PSIG...	675	2300	3785
OPEN FLOW, MCFD.....	1557	200	7000
COMPONENT, MOLE PCT			
METHANE.....	94.8	84.0	93.0
ETHANE.....	0.6	6.2	0.8
PROPANE.....	0.1	3.0	0.2
N-BUTANE.....	0.0	1.0	0.5
ISOBUTANE.....	TRACE	1.0	0.0
N-PENTANE.....	0.0	0.4	0.3
ISOPENTANE.....	0.0	0.2	0.1
CYCLOPENTANE.....	0.0	0.0	0.1
HEXANES PLUS.....	0.0	0.3	0.2
NITROGEN.....	3.8	1.4	2.4
OXYGEN.....	0.5	0.0	TRACE
ARGON.....	TRACE	0.0	0.0
HYDROGEN.....	TRACE	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	3.2	2.5
HELIUM.....	0.06	0.02	0.03
HEATING VALUE*.....	973	1148	1004
SPECIFIC GRAVITY.....	0.578	0.705	0.614

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 64 18432	INDEX SAMPLE 65 18496	INDEX SAMPLE 66 18331
STATE.....	MISSISSIPPI	MONTANA	NEW MEXICO
COUNTY.....	WARREN	BLAINE	EDDY
FIELD.....	OAK RIDGE	SAWTOOTH MOUNTAIN	ANTELOPE SINK
WELL NAME.....	BILLY BROWN 20-11 NO. 2	CAMPBELL NO. 9-4	PANOS FED. COMM NO. 1
LOCATION.....	SEC. 20, T17N, R5E	SEC. 4, T27N, R19E	SEC. 1, T19S, R23E
OWNER.....	UNION OIL CO. OF CALIFORNIA	MONTANA POWER CO.	EXXON CO., U.S.A.
COMPLETED.....	09/08/82	07/23/86	10/01/85
SAMPLED.....	08/25/87	12/09/87	03/12/87
FORMATION.....	CRET-HOSSTON	CRET-EAGLE	PENN-STRAWN
GEOLOGIC PROVINCE CODE...	210	395	430
DEPTH, FEET.....	12378	1512	7650
WELLHEAD PRESSURE, PSIG...	3780	410	1550
OPEN FLOW, MCFD.....	1500	1000	566
COMPONENT, MOLE PCT			
METHANE.....	93.0	85.0	90.4
ETHANE.....	0.8	2.8	4.5
PROPANE.....	0.2	1.5	1.6
N-BUTANE.....	0.5	0.3	0.3
ISOBUTANE.....	0.0	0.5	0.6
N-PENTANE.....	0.3	0.0	0.0
ISOPENTANE.....	0.1	0.1	0.1
CYCLOPENTANE.....	0.1	0.0	TRACE
HEXANES PLUS.....	0.2	0.0	0.2
NITROGEN.....	2.4	9.6	1.5
OXYGEN.....	TRACE	0.0	0.2
ARGON.....	0.0	TRACE	TRACE
HYDROGEN.....	0.0	0.0	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	2.5	TRACE	0.5
HELIUM.....	0.04	0.08	0.04
HEATING VALUE*.....	1004	983	1083
SPECIFIC GRAVITY.....	0.614	0.638	0.625

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18397	INDEX SAMPLE 18396	INDEX SAMPLE 18453
STATE.....	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY.....	EDDY	EDDY	EDDY
FIELD.....	LOCO HILLS	SALADAR	SHEP DRAW NE
WELL NAME.....	CEDAR LAKE "ADI" NO. 1	STONEMALL EP STATE NO. 4	HAPPY VALLEY FEDERAL NO. 1
LOCATION.....	SEC. 26, T17S, R30E	SEC. 30, T20S, R28E	SEC. 28, T22S, R26E
OWNER.....	YATES PETROLEUM CORP.	YATES PETROLEUM CORP.	EXXON CO., U.S.A.
COMPLETED.....	--/--/86	--/--/86	--/--/86
SAMPLED.....	07/01/87	07/01/87	--/--/87
FORMATION.....	PENN-ATOKA	PENN-STRAWN	PENN-STRAWN
GEOLOGIC PROVINCE CODE...	430	430	430
DEPTH, FEET.....	10673	10126	10294
WELLHEAD PRESSURE, PSIG...	2145	2150	3640
OPEN FLOW, MCFD.....	2500	5000	5200
COMPONENT, MOLE PCT			
METHANE.....	50.3	75.1	89.6
ETHANE.....	14.7	10.1	5.8
PROPANE.....	14.6	5.0	1.7
N-BUTANE.....	7.2	1.4	0.6
ISOBUTANE.....	3.1	1.8	0.3
N-PENTANE.....	3.0	1.8	0.2
ISOPENTANE.....	2.8	0.0	0.0
CYCLOPENTANE.....	0.5	1.1	0.1
HEXANES PLUS.....	2.0	3.2	0.2
NITROGEN.....	1.6	0.3	0.9
OXYGEN.....	TRACE	0.0	TRACE
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	0.1	0.1	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	TRACE
CARBON DIOXIDE.....	0.1	0.1	0.5
HELIUM.....	0.03	0.04	0.02
HEATING VALUE*.....	1869	1459	1109
SPECIFIC GRAVITY.....	1.107	0.835	0.634

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18443	INDEX SAMPLE 71 18311	INDEX SAMPLE 72 18312
STATE.....	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY.....	EDDY	HARDING	HARDING
FIELD.....	WILDCAT	NOT GIVEN	NOT GIVEN
WELL NAME.....	GULF "5" FEDERAL NO. 1	DE BACA WELL NO. 2YB	MITCHELL LEASE NO. 6M
LOCATION.....	SEC. 5, T22S, R29E	SEC. 31, T20N, R31E	SEC. 8, T19N, R30E
OWNER.....	ENRON OIL & GAS CO.	AMERIGAS, INC.	AMERIGAS, INC.
COMPLETED.....	--/--/86	02/24/87	02/24/87
SAMPLED.....	09/18/87	02/24/87	02/24/87
FORMATION.....	PENN-ATOKA	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE.....	430	445	445
DEPTH, FEET.....	12425	NOT GIVEN	NOT GIVEN
WELLHEAD PRESSURE, PSIG.....	1750	250	512
OPEN FLOW, MCFD.....	1500	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	96.4	0.0	0.0
ETHANE.....	1.6	0.0	0.0
PROPANE.....	TRACE	0.0	0.0
N-BUTANE.....	0.3	0.0	0.0
ISOBUTANE.....	0.0	0.0	0.0
N-PENTANE.....	TRACE	0.0	0.0
ISOPENTANE.....	0.4	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	0.7	0.4	1.3
OXYGEN.....	0.0	TRACE	0.3
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	0.0	0.0	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.5	99.6	98.4
HELIUM.....	0.01	TRACE	TRACE
HEATING VALUE*.....	1033	0	0
SPECIFIC GRAVITY.....	0.582	1.527	1.520

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 73 18313	INDEX SAMPLE 74 18314	INDEX SAMPLE 75 18473
STATE.....	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY.....	HARDING	HARDING	LEA
FIELD.....	NOT GIVEN	NOT GIVEN	BUFFALO VALLEY
WELL NAME.....	MITCHELL LEASE NO. 20K	LIBBY WELL NO. 4K	LANGLEY FEDERAL COM. NO. 3
LOCATION.....	SEC. 5, T18N, R30E	SEC. 16, T20N, R31E	SEC. 14, T15S, R27E
OWNER.....	AMERICAS, INC.	AMERICAS, INC.	READ & STEVENS, INC.
COMPLETED.....	02/24/87	--/--/87	09/05/85
SAMPLED.....	02/24/87	02/24/87	11/--/87
FORMATION.....	NOT GIVEN	NOT GIVEN	PENN-ATOKA
GEOLOGIC PROVINCE CODE.....	445	445	430
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	8522
WELLHEAD PRESSURE, PSIG.....	462	250	1335
OPEN FLOW, MCFD.....	NOT GIVEN	NOT GIVEN	850
COMPONENT, MOLE PCT			
METHANE.....	0.0	0.0	88.6
ETHANE.....	0.0	0.0	6.4
PROPANE.....	0.0	0.0	2.1
N-BUTANE.....	0.0	0.0	0.6
ISOBUTANE.....	0.0	0.2	0.1
N-PENTANE.....	0.0	0.0	0.2
ISOPENTANE.....	0.0	TRACE	0.2
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.1	0.1
NITROGEN.....	0.3	0.4	1.3
OXYGEN.....	0.1	0.1	0.1
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	0.0	0.0	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	99.6	99.1	0.3
HELIUM.....	0.01	TRACE	0.03
HEATING VALUE.....	0	12	1113
SPECIFIC GRAVITY.....	1.527	1.527	0.637

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 76 18375	INDEX SAMPLE 77 18451	INDEX SAMPLE 78 18462
STATE.....	NEW MEXICO	NEW MEXICO	NEW YORK
COUNTY.....	RIO ARRIBA	SAN JUAN	GENESEE
FIELD.....	WILDCAT	BLANCO	ATTICA-DANLEY CORNERS AREA
WELL NAME.....	JICARILLA 464 NO. 1	FIELDS NO. 16	ARNOLD NO. 2
LOCATION.....	SEC. 30, T30N, R3W	SEC. 25, T32N, R11W	BATAVIA TWP
OWNER.....	ROBERT L. BAYLESS	TENNECO OIL EXP. & PROD. CO.	GYPSUM ENERGY MANAGEMENT CO.
COMPLETED.....	12/01/86	07/30/87	09/20/84
SAMPLED.....	05/31/87	09/28/87	10/30/87
FORMATION.....	CRET-PICTURED CLIFFS	CRET-PICTURED CLIFFS	SILU-MEDINA
GEOLOGIC PROVINCE CODE...	580	580	160
DEPTH, FEET.....	3740	3150	960
WELLHEAD PRESSURE, PSIG...	1202	650	210
OPEN FLOW, MCFD.....	3923	1300	200
COMPONENT, MOLE PCT			
METHANE.....	86.7	75.5	83.1
ETHANE.....	7.6	5.0	9.8
PROPANE.....	3.2	1.8	2.3
N-BUTANE.....	0.4	0.6	0.6
ISOBUTANE.....	0.8	0.1	0.0
N-PENTANE.....	TRACE	0.4	0.4
ISOPENTANE.....	0.2	0.0	0.0
CYCLOPENTANE.....	0.0	TRACE	0.1
HEXANES PLUS.....	0.1	0.2	0.2
NITROGEN.....	0.6	14.7	3.1
OXYGEN.....	TRACE	TRACE	TRACE
ARGON.....	TRACE	TRACE	0.0
HYDROGEN.....	TRACE	0.0	0.1
HYDROGEN SULFIDE**.....	0.0	TRACE	0.0
CARBON DIOXIDE.....	0.2	1.6	0.2
HELIUM.....	TRACE	TRACE	0.19
HEATING VALUE*.....	1154	952	1125
SPECIFIC GRAVITY.....	0.654	0.696	0.661

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 79 18465	INDEX SAMPLE 80 18463	INDEX SAMPLE 81 18464
STATE.....	NEW YORK	NEW YORK	NEW YORK
COUNTY.....	GENESEE	WYOMING	WYOMING
FIELD.....	ATTICA-DANLEY CORNERS AREA	ATTICA-DANLEY CORNERS AREA	ATTICA-DANLEY CORNERS AREA
WELL NAME.....	MEYER NO. 1	RUPERT NO. 1	KIRSCH NO. 1
LOCATION.....	TOWN OF ALEXANDER	BENNINGTON TWP	SHELDON TWP
OWNER.....	GYPSUM ENERGY MANAGEMENT CO.	GYPSUM ENERGY MANAGEMENT CO.	GYPSUM ENERGY MANAGEMENT CO.
COMPLETED.....	05/18/83	05/05/83	03/08/83
SAMPLED.....	10/29/87	10/30/87	10/30/87
FORMATION.....	SILU-MEDINA	SILU-MEDINA	SILU-MEDINA
GEOLOGIC PROVINCE CODE...	160	160	160
DEPTH, FEET.....	1328	1732	2736
WELLHEAD PRESSURE, PSIG...	180	200	160
OPEN FLOW, MCFD.....	28	45	2
COMPONENT, MOLE PCT			
METHANE.....	85.1	88.5	89.1
ETHANE.....	7.8	6.1	4.2
PROPANE.....	1.7	0.8	0.5
N-BUTANE.....	0.5	0.4	0.3
ISOBUTANE.....	0.0	0.0	0.0
N-PENTANE.....	0.4	0.3	0.3
ISOPENTANE.....	0.0	0.1	0.0
CYCLOPENTANE.....	0.1	0.1	0.1
HEXANES PLUS.....	0.2	0.0	0.2
NITROGEN.....	3.8	3.3	4.7
OXYGEN.....	TRACE	TRACE	TRACE
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	0.1	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.1	0.2
HELIUM.....	0.19	0.14	0.19
HEATING VALUE*.....	1091	1062	1026
SPECIFIC GRAVITY.....	0.647	0.622	0.616

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18272	INDEX SAMPLE 18285	INDEX SAMPLE 18410
STATE.....	NORTH DAKOTA	NORTH DAKOTA	OKLAHOMA
COUNTY.....	MCKENZIE	WILLIAMS	ALFALFA
FIELD.....	POE	NOT GIVEN	SALT PLAINS NE
WELL NAME.....	L.M. STENEHJEN NO. 2	ZIMMERMAN NO. 10-1	STOABS "A" NO. 1-34
LOCATION.....	SEC. 10, T15N, R100W	SEC. 10, T152N, R104W	SEC. 34, T27N, R9W
OWNER.....	TEXACO INC.	COLUMBIA GAS DEVELOPMENT COR	ANADARKO PETROLEUM CORP.
COMPLETED.....	08/03/86	86/11/14	04/05/87
SAMPLED.....	11/20/86	01/07/87	07/24/87
FORMATION.....	ORDO-RED RIVER	ORDO-RED RIVER	DEVO-MISENER
GEOLOGIC PROVINCE CODE...	395	395	360
DEPTH, FEET.....	14226	12906	5945
WELLHEAD PRESSURE, PSIG...	2500	2564	2100
OPEN FLOW, MCFD.....	600	417	1146
COMPONENT, MOLE PCT			
METHANE.....	81.6	60.0	77.9
ETHANE.....	9.7	19.1	6.8
PROPANE.....	3.6	11.9	3.7
N-BUTANE.....	0.9	3.5	1.2
ISOBUTANE.....	0.2	2.7	0.2
N-PENTANE.....	0.2	0.0	0.3
ISOPENTANE.....	0.3	0.9	0.4
CYCLOPENTANE.....	0.0	TRACE	0.0
HEXANES PLUS.....	0.2	0.0	0.2
NITROGEN.....	0.6	1.0	7.9
OXYGEN.....	0.2	TRACE	0.8
ARGON.....	TRACE	0.0	0.1
HYDROGEN.....	1.0	0.1	0.2
HYDROGEN SULFIDE**.....	0.5	0.0	0.0
CARBON DIOXIDE.....	0.8	0.6	0.2
HELIUM.....	0.03	0.04	0.15
HEATING VALUE*.....	1169	1507	1094
SPECIFIC GRAVITY.....	0.678	0.888	0.702

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18357	INDEX SAMPLE 18471	INDEX SAMPLE 18291
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	BEAVER	BEAVER	BEAVER
FIELD.....	DOMBEY	GREENOUGH	GREENOUGH NW
WELL NAME.....	PITTMAN NO. 2-20	AMEN NO. 3-31	WALLACE "B" NO. 1
LOCATION.....	SEC. 20, T3N, R22ECM	SEC. 31, T6N, R21ECM	SEC. 22, T6N, R21ECM
OWNER.....	LADD PETROLEUM CORP.	LADD PETROLEUM CORP.	J. M. HUBER CORP.
COMPLETED.....	08/22/86	02/03/87	05/21/86
SAMPLED.....	04/27/87	11/05/87	01/--/87
FORMATION.....	PENN-CHESTER BASAL	MISS-CHESTER	PENN-OSWEGO L
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	7587	6521	5590
WELLHEAD PRESSURE, PSIG...	2160	400	20
OPEN FLOW, MCFD.....	1764	1251	31
COMPONENT, MOLE PCT			
METHANE.....	87.3	86.3	74.5
ETHANE.....	3.8	4.8	7.1
PROPANE.....	1.6	3.4	3.6
N-BUTANE.....	1.2	0.0	1.1
ISOBUTANE.....	0.0	1.9	0.5
N-PENTANE.....	0.0	0.0	0.6
ISOPENTANE.....	0.5	0.0	TRACE
CYCLOPENTANE.....	TRACE	0.0	0.2
HEXANES PLUS.....	0.1	0.0	0.5
NITROGEN.....	3.8	3.3	11.5
OXYGEN.....	0.0	0.0	TRACE
ARGON.....	TRACE	TRACE	TRACE
HYDROGEN.....	0.1	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.6	0.1	0.1
HELIUM.....	0.13	0.16	0.29
HEATING VALUE*.....	1060	1112	1088
SPECIFIC GRAVITY.....	0.649	0.655	0.725

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 88 18436	INDEX SAMPLE 89 18366	INDEX SAMPLE 90 18326
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	BEAVER	BECKHAM	BLAINE
FIELD.....	UNION STAR	NOT GIVEN	ELM GROVE
WELL NAME.....	VENABLE UNIT NO. 34-1	DAMRON NO. 1-2	MORDECAI NO. 2-36
LOCATION.....	SEC. 34, T3N, R23ECM	SEC. 2, T9N, R23W	SEC. 36, T13N, R12W
OWNER.....	ARCO OIL & GAS CO.	WAGNER & BROWN OIL & GAS PRO	ANR PRODUCTION CO.
COMPLETED.....	04/02/87	06/11/85	01/05/87
SAMPLED.....	09/14/87	05/18/87	03/05/87
FORMATION.....	MISS-ST. LOUIS	PENN-SPRINGER	PENN-RED FORK
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	8050	14137	11488
WELLHEAD PRESSURE, PSIG...	1128	1210	4650
OPEN FLOW, MCFD.....	552	560	5800
COMPONENT, MOLE PCT			
METHANE.....	94.7	90.4	83.1
ETHANE.....	1.8	5.1	9.0
PROPANE.....	0.4	1.9	3.3
N-BUTANE.....	0.4	0.2	0.6
ISOBUTANE.....	0.0	0.6	0.5
N-PENTANE.....	0.3	0.0	0.1
ISOPENTANE.....	TRACE	0.2	0.2
CYCLOPENTANE.....	0.1	0.0	TRACE
HEXANES PLUS.....	0.2	0.1	0.1
NITROGEN.....	1.7	0.5	0.7
OXYGEN.....	0.0	TRACE	TRACE
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	0.0	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.8	2.3
HELIUM.....	0.14	0.02	0.03
HEATING VALUE*.....	1041	1098	1144
SPECIFIC GRAVITY.....	0.594	0.627	0.682

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18389	INDEX SAMPLE 18304	INDEX SAMPLE 18467
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	BLAINE	CADDO	CADDO
FIELD.....	HYDRO NE	BRIDGEPORT W	BROXTON N
WELL NAME.....	H. C. GROENDYKE NO. 1-11	FOSTER FARMS NO. 1-1	SADLER NO. 1
LOCATION.....	SEC. 11, T13N, R13W	SEC. 1, T12N, R13W	SEC. 3, T6N, R12W
OWNER.....	NOVA ENERGY CORP.	AN-SON CORP.	SANGUINE, LTD.
COMPLETED.....	10/24/85	02/22/86	10/05/85
SAMPLED.....	06/29/87	02/23/87	10/29/87
FORMATION.....	PENN-MORROW	PENN-CUNNINGHAM	PENN-BRITT
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	11844	12886	20896
WELLHEAD PRESSURE, PSIG...	5900	6650	13500
OPEN FLOW, MCFD.....	1600	2128	2668
COMPONENT, MOLE PCT			
METHANE.....	88.4	93.0	97.5
ETHANE.....	3.7	3.4	0.6
PROPANE.....	1.3	1.0	0.1
N-BUTANE.....	0.0	0.1	0.0
ISOBUTANE.....	0.3	0.4	TRACE
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	TRACE
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.1	0.0
NITROGEN.....	4.3	0.4	0.4
OXYGEN.....	1.1	TRACE	0.0
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	TRACE	0.1	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.8	1.5	1.4
HELIUM.....	0.03	0.02	0.02
HEATING VALUE*.....	1006	1051	1002
SPECIFIC GRAVITY.....	0.622	0.607	0.574

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 94 18341	INDEX SAMPLE 95 18387	INDEX SAMPLE 96 18468
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	CADDO	CADDO	CADDO
FIELD.....	CROW PROSPECT	FORT COBB NW	ONEV
WELL NAME.....	KRUPKA NO. 1-33	STOCKTON NO. 1-21	COWAN NO. 1
LOCATION.....	SEC. 33, T8N, R9W	SEC. 21, T8N, R12W	SEC. 18, T9N, R11W
OWNER.....	SOHIO PETROLEUM CO.	SOHIO PETROLEUM CO.	SANGUINE, LTD.
COMPLETED.....	07/09/85	10/--/86	04/29/85
SAMPLED.....	03/23/87	06/24/87	10/28/87
FORMATION.....	PENN-SPRINGER	PENN-SPRINGER	PENN-BRITT
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	16349	18500	16097
WELLHEAD PRESSURE, PSIG...	7500	4000	10800
OPEN FLOW, MCFD.....	962	2500	8100
COMPONENT, MOLE PCT			
METHANE.....	96.0	95.7	96.2
ETHANE.....	1.4	0.5	1.4
PROPANE.....	0.2	0.1	TRACE
N-BUTANE.....	0.0	0.0	0.3
ISOBUTANE.....	0.1	TRACE	0.0
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.3
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	0.9	1.3	0.3
OXYGEN.....	0.1	0.3	0.0
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	0.1	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.2	2.0	1.6
HELIUM.....	0.00	0.02	0.02
HEATING VALUE*.....	1006	981	1020
SPECIFIC GRAVITY.....	0.580	0.584	0.587

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18466	INDEX SAMPLE 18437	INDEX SAMPLE 18411
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	CADDO	CANADIAN	CUSTER
FIELD.....	ONEY E	CONCHO N	ALEDO SW
WELL NAME.....	MARIE NO. 1	SCHROEDER NO. 1-12	THIESSEN NO. 1-12
LOCATION.....	SEC. 9, T9N, R11W	SEC. 21, T14N, R8W	SEC. 12, T15N, R18W
OWNER.....	SANGUINE, LTD.	CONFED OIL CO.	WARD PETROLEUM CORP.
COMPLETED.....	05/20/86	07/11/87	08/20/86
SAMPLED.....	10/28/87	09/15/87	07/28/87
FORMATION.....	PENN-BRITT	ORDO-VIOLA	PENN-ATOKA
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	15697	10750	10854
WELLHEAD PRESSURE, PSIG...	10000	1500	1150
OPEN FLOW, MCFD.....	12138	47	4518
COMPONENT, MOLE PCT			
METHANE.....	95.4	89.2	80.5
ETHANE.....	1.4	5.8	10.5
PROPANE.....	0.2	1.8	4.7
N-BUTANE.....	0.0	0.7	1.1
ISOBUTANE.....	TRACE	0.0	0.7
N-PENTANE.....	0.0	0.2	0.3
ISOPENTANE.....	0.1	0.2	0.3
CYCLOPENTANE.....	0.0	0.1	0.1
HEXANES PLUS.....	0.0	0.2	0.2
NITROGEN.....	1.2	1.1	0.7
OXYGEN.....	0.1	0.1	TRACE
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	0.0	0.0	0.3
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.6	0.6	0.7
HELIUM.....	0.02	0.04	0.03
HEATING VALUE*.....	1001	1107	1221
SPECIFIC GRAVITY.....	0.586	0.636	0.704

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18475	INDEX SAMPLE 18356	INDEX SAMPLE 18377
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	CUSTER	CUSTER	DEWEY
FIELD.....	ANTHON NE	WEATHERFORD	HUCMAC
WELL NAME.....	COIT NO. 2	CORNELL NO. 2-24	VAN METER NO. 1-8
LOCATION.....	SEC. 17, T15N, R17W	SEC. 24, T13N, R25W	SEC. 8, T18N, R14W
OWNER.....	SAMSON RESOURCES CO.	ARKLA EXPLORATION CO.	HAWKINS OIL & GAS, INC.
COMPLETED.....	12/31/85	02/16/87	01/06/87
SAMPLED.....	11/11/87	04/27/87	06/--/87
FORMATION.....	PENN-MORROW	PENN-SKINNER	PENN-MORROW
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	12259	11328	9066
WELLHEAD PRESSURE, PSIG...	1500	3609	2838
OPEN FLOW, MCFD.....	1200	2214	2078
COMPONENT, MOLE PCT			
METHANE.....	97.3	73.7	80.7
ETHANE.....	0.8	6.9	8.5
PROPANE.....	0.1	2.0	4.7
N-BUTANE.....	0.0	2.6	0.7
ISOBUTANE.....	0.1	0.0	1.1
N-PENTANE.....	0.0	0.0	0.5
ISOPENTANE.....	TRACE	9.3	0.4
CYCLOPENTANE.....	0.0	0.1	0.4
HEXANES PLUS.....	0.0	0.0	1.1
NITROGEN.....	0.3	1.7	1.4
OXYGEN.....	0.1	0.1	0.1
ARGON.....	TRACE	0.1	0.0
HYDROGEN.....	0.0	0.1	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.4	3.5	0.3
HELIUM.....	0.02	0.04	0.05
HEATING VALUE*.....	1005	1410	1262
SPECIFIC GRAVITY.....	0.576	0.871	0.731

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18359	INDEX SAMPLE 18479	INDEX SAMPLE 18476
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	DEWEY	GARFIELD	GRADY
FIELD.....	SQUIRREL CREEK S	SOONER TREND	CHICKASHA
WELL NAME.....	TRUST NO. 1-17	T. W. HODGEN NO. 2	COWBOY "B" NO. 1
LOCATION.....	SEC. 17, T16N, R15W	SEC. 33, T22N, R8W	SEC. 35, T7N, R7W
OWNER.....	MARSHALL OIL CORP.	SUN EXPLORATION & PRODUCTION	APACHE CORP.
COMPLETED.....	11/--/86	07/20/87	08/13/84
SAMPLED.....	04/27/87	11/09/87	11/12/87
FORMATION.....	PENN-MORROW	PENN-CHEROKEE	PENN-HOXBAR
GEOLOGIC PROVINCE CODE....	360	360	360
DEPTH, FEET.....	10670	6392	8110
WELLHEAD PRESSURE, PSIG....	3450	1440	1320
OPEN FLOW, MCFD.....	1500	520	1450
COMPONENT, MOLE PCT			
METHANE.....	93.8	91.6	91.3
ETHANE.....	3.2	3.9	3.1
PROPANE.....	0.9	1.1	1.3
N-BUTANE.....	0.4	0.2	0.4
ISOBUTANE.....	TRACE	0.1	0.0
N-PENTANE.....	0.0	0.0	0.2
ISOPENTANE.....	0.3	0.2	0.1
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.1
NITROGEN.....	0.4	2.2	3.2
OXYGEN.....	0.0	0.1	TRACE
ARGON.....	0.0	TRACE	TRACE
HYDROGEN.....	0.1	0.0	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.9	0.4	0.2
HELIUM.....	0.03	0.12	0.10
HEATING VALUE*.....	1057	1047	1045
SPECIFIC GRAVITY.....	0.601	0.607	0.612

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18315	INDEX SAMPLE 18330	INDEX SAMPLE 18484
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	GRADY	GRADY	HARPER
FIELD.....	GOLDEN TREND	NOT GIVEN	LOVEDALE
WELL NAME.....	BROWN NO. 1-27	MEDELL NO. 1-35	SELMAN NO. A1-32
LOCATION.....	SEC. 27, T5N, R5W	SEC. 35, T3N, R7W	SEC. 32, T27N, R20W
OWNER.....	PETROCORP, INC.	SOHIO PETROLEUM CO.	K. STEWART PETROLEUM CORP.
COMPLETED.....	01/16/86	06/20/85	03/02/87
SAMPLED.....	02/25/87	09/12/86	11/19/87
FORMATION.....	PENN-CUNNINGHAM & BOATWRIGHT	PENN-SPRINGER	PENN-MORROW
GEOLOGIC PROVINCE CODE...	360	360	355
DEPTH, FEET.....	9925	18842	5882
WELLHEAD PRESSURE, PSIG...	3161	5684	2100
OPEN FLOW, MCFD.....	2547	2455	1800
COMPONENT, MOLE PCT			
METHANE.....	86.5	96.5	94.2
ETHANE.....	7.2	1.1	3.2
PROPANE.....	3.0	0.2	0.9
N-BUTANE.....	0.7	0.0	0.2
ISOBUTANE.....	0.5	0.1	0.1
N-PENTANE.....	0.1	0.0	0.0
ISOPENTANE.....	0.2	0.0	0.3
CYCLOPENTANE.....	TRACE	0.0	0.0
HEXANES PLUS.....	0.2	0.0	0.0
NITROGEN.....	1.1	0.7	0.6
OXYGEN.....	0.0	0.0	TRACE
ARGON.....	0.0	TRACE	TRACE
HYDROGEN.....	0.1	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	1.2	0.4
HELIUM.....	0.05	0.03	0.06
HEATING VALUE*.....	1147	1006	1057
SPECIFIC GRAVITY.....	0.655	0.577	0.596

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 109 18278	INDEX SAMPLE 110 18321	INDEX SAMPLE 111 18431
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	HASKELL	KINGFISHER	LE FLORE
FIELD.....	WHITEFIELD S	SOONER TREND	SPIRO
WELL NAME.....	MOORE-TUCKER NO. 1-29	NORRIS "A" NO. 1	FOXWOOD NO. 2
LOCATION.....	SEC. 32, T9N, R20E	SEC. 8, T19N, R8W	SEC. 6, T9N, R25E
OWNER.....	ROYE REALTY & DEVELOPING, IN	CITIES SERVICE OIL & GAS COR	SAMSON RESOURCES CO.
COMPLETED.....	06/25/85	10/10/86	01/14/87
SAMPLED.....	12/03/86	03/02/87	09/08/87
FORMATION.....	DEVO-HUNTON	ORDO-SIMPSON	PENN-GILCREASE
GEOLOGIC PROVINCE CODE.....	345	360	345
DEPTH, FEET.....	4970	8490	5067
WELLHEAD PRESSURE, PSIG.....	1500	2785	396
OPEN FLOW, MCFD.....	3941	3731	11324
COMPONENT, MOLE PCT			
METHANE.....	94.0	81.6	96.2
ETHANE.....	0.9	7.9	1.1
PROPANE.....	0.1	3.8	0.1
N-BUTANE.....	0.0	1.2	0.0
ISOBUTANE.....	TRACE	0.7	0.1
N-PENTANE.....	0.0	0.5	0.0
ISOPENTANE.....	TRACE	0.2	0.0
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.0	0.3	0.0
NITROGEN.....	3.2	3.1	0.7
OXYGEN.....	0.1	0.0	TRACE
ARGON.....	TRACE	0.0	0.0
HYDROGEN.....	0.1	0.1	0.0
HYDROGEN SULFIDE*.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.5	0.5	1.7
HELIUM.....	0.08	0.06	0.08
HEATING VALUE*.....	971	1180	1000
SPECIFIC GRAVITY.....	0.587	0.700	0.581

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18353	INDEX SAMPLE 18491	INDEX SAMPLE 18279
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	OKMULGEE	PITTSBURG	POTTAWATOMIE
FIELD.....	NUYAKA	BREWER S	TECUMSEH NW
WELL NAME.....	LOWE NO. 3-32	PEARL "A" NO. 1	ROBERTSON "B" NO. 1
LOCATION.....	SEC. 32, T13N, R11E	SEC. 32, T4N, R14E	SEC. 6, T9N, R3E
OWNER.....	GMG OIL & GAS CORP.	TXO PRODUCTION CORP.	ESTORIL PRODUCING CORP.
COMPLETED.....	03/20/87	11/--/84	01/03/86
SAMPLED.....	04/23/87	11/30/87	12/04/86
FORMATION.....	PENN-DUTCHER	PENN-WAPANUCKA	PENN-RED FORK
GEOLOGIC PROVINCE CODE...	355	345	355
DEPTH, FEET.....	2492	9725	4950
WELLHEAD PRESSURE, PSIG...	400	2220	564
OPEN FLOW, MCFD.....	250	2000	1137
COMPONENT, MOLE PCT			
METHANE.....	72.8	95.3	72.0
ETHANE.....	11.0	0.4	9.4
PROPANE.....	6.6	TRACE	4.7
N-BUTANE.....	1.4	0.0	1.1
ISOBUTANE.....	1.2	0.0	0.6
N-PENTANE.....	0.0	0.0	0.4
ISOPENTANE.....	0.5	0.1	0.0
CYCLOPENTANE.....	0.1	0.0	0.1
HEXANES PLUS.....	0.0	0.0	0.2
NITROGEN.....	5.9	1.1	10.9
OXYGEN.....	0.1	0.1	0.3
ARGON.....	TRACE	TRACE	TRACE
HYDROGEN.....	0.1	0.0	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	2.9	0.1
HELIUM.....	0.10	0.06	0.08
HEATING VALUE*.....	1219	978	1108
SPECIFIC GRAVITY.....	0.752	0.592	0.735

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 115 18323	INDEX SAMPLE 116 18490	INDEX SAMPLE 117 18342
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	ROGER MILLS	ROGER MILLS	ROGER MILLS
FIELD.....	BERLIN	BERLIN NE	CHEYENNE SW
WELL NAME.....	MACKEY NO. 1-3	TAYLOR ESTATE NO. 1-27	SPROWLS NO. 3-28
LOCATION.....	SEC. 3, T11N, R24W	SEC. 27, T12N, R23W	SEC. 28, T13N, R23W
OWNER.....	SOHIO PETROLEUM CO.	APACHE CORP.	AN-SON CORP.
COMPLETED.....	12/03/86	04/15/87	04/10/86
SAMPLED.....	03/05/87	12/01/87	03/25/87
FORMATION.....	PENN-MORROW U	PENN-MORROW	PENN-RED FORK
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	18203	17288	13692
WELLHEAD PRESSURE, PSIG...	9742	12224	5925
OPEN FLOW, MCFD.....	1660	22451	20459
COMPONENT, MOLE PCT			
METHANE.....	97.0	96.9	94.4
ETHANE.....	0.3	0.3	2.7
PROPANE.....	TRACE	TRACE	0.5
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.0	TRACE	0.2
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.1	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	0.3	0.3	0.5
OXYGEN.....	TRACE	0.0	0.1
ARGON.....	0.0	TRACE	TRACE
HYDROGEN.....	0.1	0.0	0.1
HYDROGEN SULFIDE**.....	0.0	TRACE	0.0
CARBON DIOXIDE.....	2.2	2.3	1.5
HELIUM.....	0.02	0.01	0.00
HEATING VALUE*.....	988	995	1025
SPECIFIC GRAVITY.....	0.578	0.582	0.593

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 118 18394	INDEX SAMPLE 119 18497	INDEX SAMPLE 120 18489
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	ROGER MILLS	ROGER MILLS	ROGER MILLS
FIELD.....	HAMMON NW	MULE TRAIN	SWEETWATER NE
WELL NAME.....	LAURENCE NO. 1	COBB NO. 2-22	W. W. BROWN NO. 1-26
LOCATION.....	SEC. 5, T13N, R21W	SEC. 22, T15N, R23W	SEC. 26, T12N, R25W
OWNER.....	APACHE CORP.	APACHE CORP.	SANGUINE, LTD.
COMPLETED.....	09/04/83	08/01/87	02/26/86
SAMPLED.....	07/02/87	12/10/87	11/24/87
FORMATION.....	PENN-DES MOINES	PENN-SKINNER	PENN-PURYEAR
GEOLOGIC PROVINCE CODE....	360	360	360
DEPTH, FEET.....	12610	11263	17832
WELLHEAD PRESSURE, PSIG....	4120	4105	8000
OPEN FLOW, MCFD.....	1900	5116	30000
COMPONENT, MOLE PCT			
METHANE.....	90.5	84.8	97.0
ETHANE.....	5.6	8.8	0.5
PROPANE.....	1.6	3.4	TRACE
N-BUTANE.....	TRACE	0.5	0.0
ISOBUTANE.....	0.5	0.7	0.0
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.1	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	0.5	0.6	0.2
OXYGEN.....	0.0	0.1	TRACE
ARGON.....	0.0	TRACE	TRACE
HYDROGEN.....	0.1	0.0	0.0
HYDROGEN SULFIDE*.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.1	0.9	2.2
HELIUM.....	0.02	0.03	0.01
HEATING VALUE*.....	1077	1152	992
SPECIFIC GRAVITY.....	0.619	0.665	0.580

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 121 18423	INDEX SAMPLE 122 18316	INDEX SAMPLE 123 18347
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	STEPHENS	TEXAS	TEXAS
FIELD.....	MARLOW W	CAMRICK GAS AREA	GUYMON S
WELL NAME.....	LOUGHRIDGE NO. 1	WESTMORELAND "C" NO. 2-26	PEARL NO. 4
LOCATION.....	SEC. 19, T2N, R8W	SEC. 26, T1N, R18ECM	SEC. 16, T1N, R15ECM
OWNER.....	KAISER-FRANCIS OIL CO.	PLAINS PETROLEUM OPERATING C	PHILLIPS PETROLEUM CO.
COMPLETED.....	04/28/87	11/20/86	03/25/85
SAMPLED.....	08/12/87	02/27/87	04/--/87
FORMATION.....	-CHEEK	PENN-MORROW	PENN-CHEROKEE
GEOLOGIC PROVINCE CODE...	350	360	360
DEPTH, FEET.....	4450	7002	5956
WELLHEAD PRESSURE, PSIG...	1125	1353	NOT GIVEN
OPEN FLOW, MCFD.....	660	4814	1981
COMPONENT, MOLE PCT			
METHANE.....	87.9	95.7	80.7
ETHANE.....	4.7	1.8	9.2
PROPANE.....	2.2	0.6	4.6
N-BUTANE.....	0.7	TRACE	1.1
ISOBUTANE.....	0.3	0.2	0.4
N-PENTANE.....	0.4	0.0	0.2
ISOPENTANE.....	0.0	0.1	0.3
CYCLOPENTANE.....	0.1	0.0	0.1
HEXANES PLUS.....	0.2	0.0	0.1
NITROGEN.....	3.2	1.4	2.9
OXYGEN.....	0.0	0.0	TRACE
ARGON.....	0.0	TRACE	0.0
HYDROGEN.....	0.3	TRACE	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.3	0.2
HELIUM.....	0.04	0.05	0.08
HEATING VALUE*.....	1094	1028	1183
SPECIFIC GRAVITY.....	0.640	0.584	0.696

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 124 18297	INDEX SAMPLE 125 18270	INDEX SAMPLE 126 18393
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	TEXAS	TEXAS	WASHITA
FIELD.....	HOOKER E	HOUGH S	BRAITHWAIT
WELL NAME.....	STRICKLIN NO. 3	BONNER "B" NO. 1	CHARTER NO. 2-10
LOCATION.....	SEC. 35, T5N, R18ECM	SEC. 9, T4N, R14ECM	SEC. 10, T11N, R18W
OWNER.....	APACHE CORP.	ANADARKO PETROLEUM CORP.	MERIDIAN OIL, INC.
COMPLETED.....	06/23/84	03/19/86	03/28/86
SAMPLED.....	02/17/87	11/--/86	07/02/87
FORMATION.....	MISS-CHESTER	PENN-MORROW C	PENN-DES MOINES&GRANITE WASH
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	6546	6148	12550
WELLHEAD PRESSURE, PSIG...	850	NOT GIVEN	2316
OPEN FLOW, MCFD.....	4345	3500	1768
COMPONENT, MOLE PCT			
METHANE.....	85.2	80.7	83.6
ETHANE.....	5.3	4.5	9.0
PROPANE.....	3.7	3.1	4.3
N-BUTANE.....	1.1	0.5	0.8
ISOBUTANE.....	0.7	0.5	0.7
N-PENTANE.....	0.3	0.2	TRACE
ISOPENTANE.....	0.3	0.0	0.2
CYCLOPENTANE.....	0.1	0.0	0.0
HEXANES PLUS.....	0.4	0.2	0.0
NITROGEN.....	2.3	9.8	0.8
OXYGEN.....	0.1	0.0	0.0
ARGON.....	TRACE	0.0	0.0
HYDROGEN.....	0.1	0.1	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.3	0.5
HELIUM.....	0.14	0.25	0.03
HEATING VALUE*.....	1165	1031	1180
SPECIFIC GRAVITY.....	0.679	0.674	0.677

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 127 18398	INDEX SAMPLE 128 18280	INDEX SAMPLE 129 18383
STATE.....	OKLAHOMA	OKLAHOMA	PENNSYLVANIA
COUNTY.....	WASHITA	WOODS	WESTMORELAND
FIELD.....	CORDELL W	FALKNER SE	FORBES STATE FOREST
WELL NAME.....	BAIRD ESTATE NO. 1-11	SCHULTZ NO. 2-22	COMMONWEALTH OF PENN. 353-2
LOCATION.....	SEC. 11, T9N, R18W	SEC. 22, T28N, R16W	SEC. H, LIGONIER TWP.
OWNER.....	POGO PRODUCING CO.	PIONEER PRODUCTION CORP.	CNG DEVELOPMENT CO.
COMPLETED.....	07/31/86	05/30/85	02/04/87
SAMPLED.....	07/08/87	11/13/86	06/16/87
FORMATION.....	PENN-GRANITE WASH	PERM-DEWEY	DEVO-HUNTERSVILLE
GEOLOGIC PROVINCE CODE...	360	360	160
DEPTH, FEET.....	9160	5136	8093
WELLHEAD PRESSURE, PSIG...	2508	NOT GIVEN	2900
OPEN FLOW, MCFD.....	1250	1600	15000
COMPONENT, MOLE PCT			
METHANE.....	89.7	84.2	96.5
ETHANE.....	5.0	5.0	1.2
PROPANE.....	2.4	3.7	0.1
N-BUTANE.....	0.5	1.3	0.0
ISOBUTANE.....	0.6	0.6	0.0
N-PENTANE.....	TRACE	0.5	0.0
ISOPENTANE.....	0.2	0.1	0.0
CYCLOPENTANE.....	0.0	0.2	0.0
HEXANES PLUS.....	0.1	0.4	0.0
NITROGEN.....	1.1	3.7	1.7
OXYGEN.....	0.0	0.1	0.3
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	0.1	0.2	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	TRACE	0.3
HELIUM.....	0.04	0.13	0.03
HEATING VALUE*.....	1115	1157	1001
SPECIFIC GRAVITY.....	0.633	0.685	0.572

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 130 18298	INDEX SAMPLE 131 18492	INDEX SAMPLE 132 18282
STATE.....	TENNESSEE	TEXAS	TEXAS
COUNTY.....	PICKETT	BRAZORIA	CAMERON
FIELD.....	NOT GIVEN	DANBURY	WILDCAT
WELL NAME.....	RAY HUDDLESTON NO. 1	KILROY-VRAZEL NO. 1	STATE TRACT 667 NO. 1
LOCATION.....	SEC. 2, A-53	MATTIE SHAPARD SUR., A-668	PORT ISABEL SUR., A-265
OWNER.....	OHIO KENTUCKY OIL CORP.	KILROY CO. OF TEXAS	ADOBE OIL & GAS CORP.
COMPLETED.....	04/26/86	07/--/87	--/--/86
SAMPLED.....	01/12/87	12/05/87	12/17/86
FORMATION.....	ORDO-LEXINGTON & CURDSVILLE	OLIG-NODOSARIA BLANPIEDI	PLIO-NOT GIVEN
GEOLOGIC PROVINCE CODE....	300	220	220
DEPTH, FEET.....	626	8983	5968
WELLHEAD PRESSURE, PSIG....	40	3500	2485
OPEN FLOW, MCFD.....	1100	3450	1969
COMPONENT, MOLE PCT			
METHANE.....	79.7	89.6	98.6
ETHANE.....	10.9	5.5	0.2
PROPANE.....	3.8	1.9	0.2
N-BUTANE.....	0.7	0.4	0.0
ISOBUTANE.....	0.4	0.4	0.1
N-PENTANE.....	0.1	0.2	0.0
ISOPENTANE.....	0.1	TRACE	TRACE
CYCLOPENTANE.....	TRACE	0.0	0.0
HEXANES PLUS.....	0.1	0.2	0.0
NITROGEN.....	3.7	0.8	0.6
OXYGEN.....	TRACE	0.1	TRACE
ARGON.....	TRACE	TRACE	0.0
HYDROGEN.....	0.2	0.0	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	TRACE	1.0	TRACE
HELIUM.....	0.16	TRACE	TRACE
HEATING VALUE*.....	1153	1099	1011
SPECIFIC GRAVITY.....	0.682	0.634	0.560

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18273	INDEX SAMPLE 18455	INDEX SAMPLE 18391
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	CROCKETT	DE WITT	DE WITT
FIELD.....	UNIVERSITY 31	BADE	GUNPOINT N
WELL NAME.....	UNIVERSITY "32-17" NO. 1	BADE NO. 1	L. E. SCHRADE NO. 1
LOCATION.....	SEC. 17, BLK. 32, UNIV. LAND	JAMES JONES SUR., A-279	JAMES JONES SUR., A-279
OWNER.....	THOMPSON, J. CLEO	HANSON MINERALS CO.	APACHE CORP.
COMPLETED.....	07/25/86	--/--/87	12/--/85
SAMPLED.....	11/25/86	05/12/87	07/--/87
FORMATION.....	PENN-STRAWN, DETRITAL	OLIG-GREY SAND	EOCE-WILCOX L
GEOLOGIC PROVINCE CODE...	430	220	220
DEPTH, FEET.....	9240	13483	12937
WELLHEAD PRESSURE, PSIG...	2755	5800	5450
OPEN FLOW, MCFD.....	9600	17000	6992
COMPONENT, MOLE PCT			
METHANE.....	92.5	88.4	86.6
ETHANE.....	4.3	4.0	5.2
PROPANE.....	0.9	1.1	1.3
N-BUTANE.....	TRACE	0.0	0.0
ISOBUTANE.....	0.3	0.8	0.6
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	TRACE	0.0	TRACE
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	1.1	0.1	0.3
OXYGEN.....	0.0	TRACE	TRACE
ARGON.....	0.0	TRACE	0.0
HYDROGEN.....	0.1	0.0	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.7	TRACE	6.0
HELIUM.....	0.04	5.5	1024
HEATING VALUE*.....	1048	1024	1024
SPECIFIC GRAVITY.....	0.600	0.652	0.662

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18392	INDEX SAMPLE 18459	INDEX SAMPLE 18439
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	DE WITT	FORT BEND	HANSFORD
FIELD.....	GUNPOINT S	MOORE'S ORCHARD	HANNAS DRAW
WELL NAME.....	LOVEL A. BLAIN NO. 3	FREUDENSPRUNG NO. 2	ALLAR NO. 1
LOCATION.....	MUMFORD HOUSE SUR., A-226	GAIL BORDEN SUR., A-12	SEC. 213, BLK. 2, GH&H SUR.
OWNER.....	APACHE CORP.	PARTNERS OIL CO.	CAMBRIDGE & NAIL PET. EXPL.
COMPLETED.....	08/--/86	06/03/86	02/13/87
SAMPLED.....	07/--/87	10/26/87	09/16/87
FORMATION.....	EOCE-WILCOX M	EOCE-WILCOX	PERM-WOLFCAMP
GEOLOGIC PROVINCE CODE...	220	220	360
DEPTH, FEET.....	11036	12257	3030
WELLHEAD PRESSURE, PSIG...	5900	8333	342
OPEN FLOW, MCFD.....	4273	3750	2600
COMPONENT, MOLE PCT			
METHANE.....	81.3	84.5	76.6
ETHANE.....	8.7	4.9	7.1
PROPANE.....	3.9	1.9	3.5
N-BUTANE.....	0.6	0.7	1.2
ISOBUTANE.....	1.0	0.1	0.0
N-PENTANE.....	0.0	0.4	0.4
ISOPENTANE.....	0.2	0.3	0.1
CYCLOPENTANE.....	0.0	0.3	0.1
HEXANES PLUS.....	0.0	0.5	0.2
NITROGEN.....	0.4	3.4	9.9
OXYGEN.....	0.0	0.9	0.1
ARGON.....	0.0	TRACE	TRACE
HYDROGEN.....	TRACE	TRACE	0.0
HYDROGEN SULFIDE*	0.0	0.0	0.0
CARBON DIOXIDE.....	3.9	2.1	0.2
HELIUM.....	TRACE	TRACE	0.56
HEATING VALUE*.....	1141	1082	1070
SPECIFIC GRAVITY.....	0.704	0.679	0.700

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 139 18478	INDEX SAMPLE 140 18310	INDEX SAMPLE 141 18399
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	HEMPHILL	HEMPHILL	HEMPHILL
FIELD.....	HILDERBRAND	HOWE RANCH	VIKING
WELL NAME.....	COLEMAN-GRAHAM NO. 6	GENE HOWE NO. 7	JONES NO. 11-1
LOCATION.....	SEC. 179, BLK. 41, H&TC SUR.	SEC. 140, BLK. 41, H&TC SUR.	SEC. 11, BLK. 1, WADE & HOOP
OWNER.....	MAXUS EXPLORATION CO.	MERIDIAN OIL, INC.	HNG OIL CO.
COMPLETED.....	10/14/87	09/27/85	--/--/00
SAMPLED.....	11/13/87	02/25/87	07/09/87
FORMATION.....	PERM-GRANITE WASH	PENN-CLEVELAND	PENN-MORROW
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	9908	9288	14980
WELLHEAD PRESSURE, PSIG...	1685	3945	2700
OPEN FLOW, MCFD.....	1699	7500	24300
COMPONENT, MOLE PCT			
METHANE.....	69.5	82.5	97.1
ETHANE.....	11.4	9.2	0.5
PROPANE.....	5.6	4.1	0.1
N-BUTANE.....	1.7	0.9	0.0
ISOBUTANE.....	0.4	0.8	TRACE
N-PENTANE.....	0.6	0.3	0.0
ISOPENTANE.....	0.3	0.2	0.0
CYCLOPENTANE.....	0.1	TRACE	0.0
HEXANES PLUS.....	0.2	0.2	0.0
NITROGEN.....	1.0	0.8	0.3
OXYGEN.....	0.1	0.1	0.0
ARGON.....	TRACE	0.0	0.0
HYDROGEN.....	0.2	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	9.0	0.9	1.9
HELIUM.....	0.03	0.03	0.02
HEATING VALUE*.....	1176	1196	997
SPECIFIC GRAVITY.....	0.813	0.694	0.578

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18332	INDEX SAMPLE 18438	INDEX SAMPLE 18243
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	LAVACA	LIPSCOMB	LIVE OAK
FIELD.....	BORCHERS	DARDEN	SHARON LEE
WELL NAME.....	A. M. VAUGHN NO. 1	PINCKARD "B" NO. 6	BLANCHE HERRING NO. 1
LOCATION.....	JOHN ALLEY SUR., A-526	HT&B SUR.	NOT GIVEN
OWNER.....	HOWELL DRILLING, INC.	TXO PRODUCTION CORP.	TEXACO INC.
COMPLETED.....	--/--/87	--/--/87	06/23/85
SAMPLED.....	02/06/87	09/16/87	11/03/86
FORMATION.....	EOCE-YEGUA	PENN-CHEROKEE	CRET-SLIGO
GEOLOGIC PROVINCE CODE...	220	360	220
DEPTH, FEET.....	3711	7740	16692
WELLHEAD PRESSURE, PSIG...	1550	NOT GIVEN	9300
OPEN FLOW, MCFD.....	12000	1034	7000
COMPONENT, MOLE PCT			
METHANE.....	99.0	81.0	90.9
ETHANE.....	0.1	9.4	0.0
PROPANE.....	TRACE	4.6	0.1
N-BUTANE.....	0.0	1.6	0.0
ISOBUTANE.....	0.0	0.1	TRACE
N-PENTANE.....	0.0	0.6	0.0
ISOPENTANE.....	0.0	0.1	0.0
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.0	0.3	0.0
NITROGEN.....	0.4	1.5	2.0
OXYGEN.....	TRACE	0.2	0.1
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	0.0	0.1
HYDROGEN SULFIDE**.....	TRACE	0.0	0.0
CARBON DIOXIDE.....	0.3	0.4	6.9
HELIUM.....	0.01	0.07	0.01
HEATING VALUE*.....	1005	1215	924
SPECIFIC GRAVITY.....	0.558	0.706	0.632

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18472	INDEX SAMPLE 18381	INDEX SAMPLE 18367
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	LOVING	MC MULLEN	MC MULLEN
FIELD.....	WHITE MULE	COW CREEK S	LA CHUSA
WELL NAME.....	TEXACO "35" NO. 1	JEFFERSON NO. 1	RIVES TRUST NO. 1
LOCATION.....	SEC. 35, BLK. 54, T-2, T&P S	CALVIN P. WRIGHT SUR., A-115	P. GUEYDAN SUR., A-600
OWNER.....	CITIES SERVICE OIL & GAS COR	FINA OIL & CHEMICAL CO.	CSX OIL & GAS CORP.
COMPLETED.....	04/25/86	12/02/85	04/--/86
SAMPLED.....	11/02/87	06/18/87	05/--/87
FORMATION.....	PENN-CRITTENDON	EOCE-WILCOX	CRET-SLIGO
GEOLOGIC PROVINCE CODE....	430	220	220
DEPTH, FEET.....	15386	8300	15978
WELLHEAD PRESSURE, PSIG....	1200	3182	11828
OPEN FLOW, MCFD.....	3000	1200	6878
COMPONENT, MOLE PCT			
METHANE.....	97.5	87.3	88.0
ETHANE.....	0.7	5.3	0.0
PROPANE.....	TRACE	3.1	TRACE
N-BUTANE.....	0.2	0.6	0.0
ISOBUTANE.....	0.0	0.8	0.0
N-PENTANE.....	0.0	0.1	0.0
ISOPENTANE.....	0.0	0.4	0.0
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.1	0.2	0.0
NITROGEN.....	0.3	0.4	3.4
OXYGEN.....	0.0	0.0	0.5
ARGON.....	TRACE	0.0	0.0
HYDROGEN.....	0.0	0.1	0.5
HYDROGEN SULFIDE**.....	0.0	0.0	0.1
CARBON DIOXIDE.....	1.1	1.8	7.4
HELIUM.....	0.01	TRACE	0.01
HEATING VALUE*.....	1012	1136	895
SPECIFIC GRAVITY.....	0.576	0.665	0.642

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18403	INDEX SAMPLE 18284	INDEX SAMPLE 18355
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	MC MULLEN	NOEYES	OGHILTREE
FIELD.....	RHODE RANCH	M-4	ALPAR
WELL NAME.....	WHEELER "C" NO. 3	STATE TRACT NO. 915-S	NITSCHKE "A" NO. 3
LOCATION.....	J. POITEVENT SUR., A-402	MUSTANG ISLAND AREA, BLK. 91	SEC. 110, BLK. 4T, T&NO SUR.
OWNER.....	CSX OIL & GAS CORP.	SEAGULL ENERGY EXP. & PROD.,	PHILLIPS PETROLEUM CO.
COMPLETED.....	10/20/85	--/--/86	12/24/86
SAMPLED.....	07/21/87	12/--/--/86	04/27/87
FORMATION.....	EOCE-WILCOX	OLIG-MARGINULINA & FRIO	PENN-MORROW U
GEOLOGIC PROVINCE CODE.....	220	955	360
DEPTH, FEET.....	8600	8300	7450
WELLHEAD PRESSURE, PSIG.....	2405	2200	1381
OPEN FLOW, MCFD.....	4000	3864	4400
COMPONENT, MOLE PCT			
METHANE.....	86.4	94.0	93.5
ETHANE.....	6.1	2.8	3.8
PROPANE.....	2.6	0.9	0.9
N-BUTANE.....	0.7	0.2	0.0
ISOBUTANE.....	0.3	0.4	TRACE
N-PENTANE.....	0.3	0.2	0.0
ISOPENTANE.....	0.2	0.0	0.0
CYCLOPENTANE.....	0.1	TRACE	0.0
HEXANES PLUS.....	0.2	0.1	0.0
NITROGEN.....	0.6	0.8	1.6
OXYGEN.....	0.1	TRACE	0.0
ARGON.....	TRACE	0.0	0.0
HYDROGEN.....	0.2	0.1	TRACE
HYDROGEN SULFIDE*.....	0.0	0.0	0.0
CARBON DIOXIDE.....	2.2	0.3	0.1
HELIUM.....	TRACE	0.01	0.13
HEATING VALUE*.....	1119	1060	1040
SPECIFIC GRAVITY.....	0.665	0.597	0.589

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 151 18427	INDEX SAMPLE 152 18345	INDEX SAMPLE 153 18418
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	OCHILTREE	OCHILTREE	OCHILTREE
FIELD.....	FARNSWORTH	HAMKER RANCH	HAMKER RANCH
WELL NAME.....	PAUL NO. 1-46	R. H. HOLLAND NO. 2	DANIEL KUNKEL NO. 2
LOCATION.....	SEC. 46, T4T, T&NO SUR.	SEC. 649, BLK. 43, H&TC SUR.	SEC. 739, BLK. 43, H&TC SUR.
OWNER.....	COURSON OIL & GAS, INC.	DIAMOND SHAMROCK EXPLORATION	MAXUS EXPLORATION CO.
COMPLETED.....	12/16/86	01/07/87	04/27/87
SAMPLED.....	08/25/87	04/06/87	08/04/87
FORMATION.....	PENN-CLEVELAND	PENN-MORROW L	PENN-MORROW L
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	6475	9900	9242
WELLHEAD PRESSURE, PSIG...	1438	4605	2690
OPEN FLOW, MCFD.....	3900	14000	5600
COMPONENT, MOLE PCT			
METHANE.....	81.6	95.2	85.0
ETHANE.....	3.9	1.4	5.2
PROPANE.....	4.5	0.5	2.4
N-BUTANE.....	1.4	0.0	0.5
ISOBUTANE.....	0.3	0.2	0.5
N-PENTANE.....	0.3	0.0	0.0
ISOPENTANE.....	0.3	0.0	0.3
CYCLOPENTANE.....	0.1	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	6.2	1.3	1.2
OXYGEN.....	0.1	0.2	0.2
ARGON.....	TRACE	TRACE	3.8
HYDROGEN.....	0.4	0.1	0.2
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.5	1.2	0.7
HELIUM.....	0.24	0.05	0.05
HEATING VALUE*.....	1113	1009	1065
SPECIFIC GRAVITY.....	0.691	0.588	0.668

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 154 18287	INDEX SAMPLE 155 18386	INDEX SAMPLE 156 18402
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	OCHILTREE	PALO PINTO	PECOS
FIELD.....	LIPS W	RANCHO DE PAZ	FT. STOCKTON
WELL NAME.....	ODC NO. 2-53	MIKE HOLLAND NO. 1	ROBERTS "A" NO. 1
LOCATION.....	SEC. 53, BLK. R, AB&M SUR.	HENRY BIRD SUR., A-26	SEC. 2, BLK. 106, T&STL SUR.
OWNER.....	DIAMOND SHAMROCK EXPLORATION	UPHAM OIL & GAS CO.	GRAHAM, BILL J., OIL & GAS
COMPLETED.....	07/29/86	02/25/85	--/--/87
SAMPLED.....	01/10/87	06/20/87	07/14/87
FORMATION.....	PENN-CLEVELAND	PENN-BEND CONGLOMERATE	PERM-YATES
GEOLOGIC PROVINCE CODE...	360	425	430
DEPTH, FEET.....	6638	3400	3171
WELLHEAD PRESSURE, PSIG...	1320	1479	555
OPEN FLOW, MCFD.....	8400	6900	3200
COMPONENT, MOLE PCT			
METHANE.....	82.9	78.0	84.8
ETHANE.....	9.0	9.9	4.3
PROPANE.....	4.3	4.3	2.4
N-BUTANE.....	1.1	0.9	0.8
ISOBUTANE.....	0.5	0.9	0.2
N-PENTANE.....	0.3	0.2	0.2
ISOPENTANE.....	0.1	0.3	0.2
CYCLOPENTANE.....	0.1	TRACE	0.1
HEXANES PLUS.....	0.1	0.1	0.2
NITROGEN.....	1.1	4.7	6.3
OXYGEN.....	TRACE	0.2	0.1
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	0.1	0.1	0.3
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	0.2	0.1
HELIUM.....	0.06	0.12	0.05
HEATING VALUE*.....	1193	1172	1062
SPECIFIC GRAVITY.....	0.685	0.710	0.654

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 157 18348	INDEX SAMPLE 158 18333	INDEX SAMPLE 159 18448
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	POTTER	SHERMAN	TERRELL
FIELD.....	NOT GIVEN	COLDWATER RANCH	BROWN-BASSETT
WELL NAME.....	BIVINS RANCH NO. 1-2	COLDWATER "C" NO. 10	HERMAN 8 NO. 1 (LOWER ZONE)
LOCATION.....	SEC. 2, BLK. 4, ACH&B SUR.	SEC. 37, BLK. 3-B, GH&H SUR.	SEC. 8, BLK. 161, TMRR SUR.
OWNER.....	BAKER & TAYLOR DRILLING CO.	PHILLIPS PETROLEUM CO.	TENNECO OIL EXP. & PROD. CO.
COMPLETED.....	--/--/87	10/20/86	10/16/84
SAMPLED.....	04/15/87	03/26/87	09/28/87
FORMATION.....	PERM-WICHITA-ALBANY	PENN-TONKAWA	ORDO-FUSSELMAN
GEOLOGIC PROVINCE CODE...	440	360	430
DEPTH, FEET.....	3300	4844	12806
WELLHEAD PRESSURE.PSIG...	NOT GIVEN	1055	1781
OPEN FLOW, MCFD.....	2200	4800	5000
COMPONENT, MOLE PCT			
METHANE.....	58.4	74.7	95.7
ETHANE.....	3.0	6.9	1.2
PROPANE.....	1.6	4.7	0.0
N-BUTANE.....	0.4	1.1	0.3
ISOBUTANE.....	0.5	0.6	0.0
N-PENTANE.....	0.0	0.2	0.2
ISOPENTANE.....	0.1	0.2	0.0
CYCLOPENTANE.....	0.0	0.0	TRACE
HEXANES PLUS.....	0.1	0.1	0.1
NITROGEN.....	33.0	11.0	0.6
OXYGEN.....	0.0	TRACE	TRACE
ARGON.....	0.2	TRACE	TRACE
HYDROGEN.....	0.0	0.1	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.6	0.1	1.9
HELIUM.....	2.32	0.21	0.02
HEATING VALUE*.....	727	1082	1014
SPECIFIC GRAVITY.....	0.739	0.716	0.592

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 160 18450	INDEX SAMPLE 161 18474	INDEX SAMPLE 162 18322
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	TERRELL	VAL VERDE	WEBB
FIELD.....	BROWN-BASSETT	BAXTER-WENTWORTH EXT.	LAREDO LOBO
WELL NAME.....	HERMAN 8 NO. 1 (UPPER ZONE)	BUNGER "6" NO. 1	ACEVEDO-HAERING NO. 2
LOCATION.....	SEC. 8, BLK. 161, TMRR SUR.	SEC. 6, BLK. Q3, TC&RR SUR.	D. GARCIA SUR. 44, A-54
OWNER.....	TENNECO OIL EXP. & PROD. CO.	FELMONT OIL CORP.	CONSOLIDATED OIL & GAS, INC.
COMPLETED.....	11/16/86	03/25/86	02/--/85
SAMPLED.....	09/28/87	11/--/87	03/03/87
FORMATION.....	PENN-STRAWN	PENN-CANYON	EOCE-WILCOX
GEOLOGIC PROVINCE CODE.....	430	430	220
DEPTH, FEET.....	11631	3654	6336
WELLHEAD PRESSURE, PSIG...	2329	370	2300
OPEN FLOW, MCFD.....	3725	633	7800
COMPONENT, MOLE PCT			
METHANE.....	94.8	88.6	89.0
ETHANE.....	0.2	3.1	5.4
PROPANE.....	0.0	1.5	2.2
N-BUTANE.....	0.3	0.6	0.5
ISOBUTANE.....	0.0	TRACE	0.7
N-PENTANE.....	0.3	0.1	0.2
ISOPENTANE.....	0.0	0.3	0.2
CYCLOPENTANE.....	TRACE	0.0	0.1
HEXANES PLUS.....	0.1	0.0	0.4
NITROGEN.....	0.6	4.5	0.4
OXYGEN.....	TRACE	0.8	0.1
ARGON.....	TRACE	0.1	0.0
HYDROGEN.....	0.0	0.0	0.1
HYDROGEN SULFIDE**.....	TRACE	0.0	0.0
CARBON DIOXIDE.....	3.6	0.3	0.7
HELIUM.....	0.02	0.09	TRACE
HEATING VALUE*.....	995	1030	1137
SPECIFIC GRAVITY.....	0.606	0.628	0.649

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 163 18317	INDEX SAMPLE 164 18346	INDEX SAMPLE 165 18328
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	WHEELER	WHEELER	WINKLER
FIELD.....	B & B	LISTER	CRITENDON
WELL NAME.....	REID-JACKSON NO. 1	STREET E B NO. 1	TUBB ESTATE NO. 1-21
LOCATION.....	SEC. 9, R&E SUR.	SEC. 15, BLK.L, J. M. LINDSE	NOT GIVEN
OWNER.....	HORIZON OIL & GAS CO.	SUN EXPLORATION & PRODUCTION	HERITAGE RESOURCES, INC.
COMPLETED.....	05/27/85	01/15/87	07/--/86
SAMPLED.....	02/27/87	04/--/87	03/10/87
FORMATION.....	PENN-GRANITE WASH	PENN-GRANITE WASH	ORDO-FUSSELMAN
GEOLOGIC PROVINCE CODE...	360	360	430
DEPTH, FEET.....	12060	12251	18000
WELLHEAD PRESSURE, PSIG...	4250	2725	3600
OPEN FLOW, MCFD.....	5400	11939	18000
COMPONENT, MOLE PCT			
METHANE.....	79.0	85.5	84.1
ETHANE.....	11.1	7.8	0.8
PROPANE.....	4.9	3.4	0.1
N-BUTANE.....	1.3	0.7	0.0
ISOBUTANE.....	1.0	0.6	TRACE
N-PENTANE.....	0.5	0.1	0.0
ISOPENTANE.....	0.3	0.2	0.0
CYCLOPENTANE.....	0.2	0.0	0.0
HEXANES PLUS.....	0.5	0.1	0.0
NITROGEN.....	0.7	1.4	10.6
OXYGEN.....	0.0	0.0	2.7
ARGON.....	0.0	0.0	0.1
HYDROGEN.....	0.1	0.1	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.1
CARBON DIOXIDE.....	0.4	0.2	1.4
HELIUM.....	0.03	0.04	0.03
HEATING VALUE*.....	1271	1156	870
SPECIFIC GRAVITY.....	0.731	0.663	0.633

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 18329	INDEX SAMPLE 18344	INDEX SAMPLE 18447
STATE.....	TEXAS	TEXAS	UTAH
COUNTY.....	WINKLER	YOUNG	JUAB
FIELD.....	CRITTENDON	GOOSENECK	FISH SPRINGS
WELL NAME.....	TUBB ESTATE NO. 23	WILEY NO. 1	SPRING WATER SAMPLE
LOCATION.....	NOT GIVEN	J. EDDLEMAN SUR., A-1728	T11S, R14W
OWNER.....	HERITAGE RESOURCES, INC.	RANGER OPERATING CO.	CRAFTS, MARK
COMPLETED.....	07/--/86	04/26/86	--/--/87
SAMPLED.....	10/21/86	04/02/87	09/25/87
FORMATION.....	PENN-STRAWN	MISS---	NOT GIVEN
GEOLOGIC PROVINCE CODE.....	430	425	575
DEPTH, FEET.....	13900	4298	NOT GIVEN
WELLHEAD PRESSURE, PSIG.....	7800	1780	NOT GIVEN
OPEN FLOW, MCFD.....	20000	7900	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	96.8	72.9	0.2
ETHANE.....	1.2	10.0	0.0
PROPANE.....	0.2	6.1	TRACE
N-BUTANE.....	0.0	1.8	0.0
ISOBUTANE.....	0.1	0.8	TRACE
N-PENTANE.....	0.0	0.6	0.0
ISOPENTANE.....	TRACE	0.4	0.0
CYCLOPENTANE.....	0.0	0.1	0.1
HEXANES PLUS.....	0.0	0.3	0.0
NITROGEN.....	0.7	6.3	93.2
OXYGEN.....	TRACE	0.1	2.9
ARGON.....	TRACE	TRACE	1.1
HYDROGEN.....	0.1	0.1	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	TRACE
CARBON DIOXIDE.....	0.9	0.3	2.4
HELIUM.....	0.01	0.17	0.03
HEATING VALUE*.....	1011	1226	6
SPECIFIC GRAVITY.....	0.575	0.761	0.989

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 169 18449	INDEX SAMPLE 170 18283	INDEX SAMPLE 171 18388
STATE.....	UTAH	UTAH	WEST VIRGINIA
COUNTY.....	UINTAH	UINTAH	LEWIS
FIELD.....	EVACUATION CREEK	ROCK	ASPINALL-FINSTER
WELL NAME.....	EVACUATION CREEK-STATE-A NO1	FEDERAL "A" NO. 1	MCDONALD NO. 2-A
LOCATION.....	SEC. 2, T12S, R25E	SEC. 12, T11S, R23E	COLLIN SETTLEMENT, PETERSON
OWNER.....	TXO PRODUCTION CORP.	TXO PRODUCTION CORP.	PETROLEUM RESOURCES, INC.
COMPLETED.....	11/19/85	12/23/85	09/14/85
SAMPLED.....	09/25/87	12/23/86	06/27/87
FORMATION.....	CRET-DAKOTA	EOCE-WASATCH	DEVO-ORISKANY
GEOLOGIC PROVINCE CODE...	575	575	160
DEPTH, FEET.....	8107	4900	7595
WELLHEAD PRESSURE, PSIG...	2800	1600	2450
OPEN FLOW, MCFD.....	3220	800	150
COMPONENT, MOLE PCT			
METHANE.....	86.4	93.0	90.6
ETHANE.....	6.3	3.0	5.3
PROPANE.....	2.2	0.8	1.0
N-BUTANE.....	0.8	0.3	0.0
ISOBUTANE.....	0.3	0.2	0.3
N-PENTANE.....	0.7	0.1	0.0
ISOPENTANE.....	0.0	0.1	0.0
CYCLOPENTANE.....	0.2	TRACE	0.0
HEXANES PLUS.....	0.5	0.1	0.0
NITROGEN.....	1.5	1.2	1.1
OXYGEN.....	0.1	0.2	TRACE
ARGON.....	TRACE	TRACE	0.0
HYDROGEN.....	0.0	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.9	0.9	1.6
HELIUM.....	0.04	TRACE	0.04
HEATING VALUE*.....	1147	1047	1049
SPECIFIC GRAVITY.....	0.670	0.605	0.615

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 172 18425	INDEX SAMPLE 173 18414	INDEX SAMPLE 174 18239
STATE.....	WEST VIRGINIA	WEST VIRGINIA	WYOMING
COUNTY.....	MINGO	RALEIGH	LINCOLN
FIELD.....	NOT GIVEN	NOT GIVEN	WHISKEY BUTTE
WELL NAME.....	NO. C-1	NEW RIVER CO. NO. 1	WHISKEY BUTTE FEDERAL NO.1-8
LOCATION.....	RIGHT FORK OF TRACE CREEK	TOWN DIST., BECKLEY QUAD.	SEC. 8, T20N, R112W
OWNER.....	SENECA-UPSHUR DEVELOPMENT CO	ASHLAND EXPLORATION, INC.	AMOCO PRODUCTION CO.
COMPLETED.....	--/--/87	10/01/85	04/01/85
SAMPLED.....	08/14/87	07/28/87	10/29/86
FORMATION.....	DEVO-BROWN SHALE	SILU-TUSCARORA	CRET-FRONTIER
GEOLOGIC PROVINCE CODE...	160	160	535
DEPTH, FEET.....	NOT GIVEN	2111	11211
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	1200	4272
OPEN FLOW, MCFD.....	NOT GIVEN	1185	1200
COMPONENT, MOLE PCT			
METHANE.....	77.9	8.7	81.3
ETHANE.....	13.7	0.2	11.4
PROPANE.....	4.8	0.0	3.7
N-BUTANE.....	1.0	0.0	0.7
ISOBUTANE.....	0.4	0.0	0.7
N-PENTANE.....	0.2	0.0	0.2
ISOPENTANE.....	0.3	0.0	0.2
CYCLOPENTANE.....	0.0	0.0	0.1
HEXANES PLUS.....	0.0	0.0	0.2
NITROGEN.....	1.3	1.6	0.8
OXYGEN.....	TRACE	0.1	0.1
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	0.4	0.0	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	89.4	0.7
HELIUM.....	0.03	0.08	0.01
HEATING VALUE*.....	1227	91	1202
SPECIFIC GRAVITY.....	0.705	1.433	0.695

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 175 18286	INDEX SAMPLE 176 18454	INDEX SAMPLE 177 18493
STATE.....	WYOMING	WYOMING	WYOMING
COUNTY.....	NATRONA	SWEETWATER	SWEETWATER
FIELD.....	FRENCHIE DRAW	BLUE FOREST	LINCOLN ROAD
WELL NAME.....	GRAHAM UNIT NO. 21	BLUE FOREST NO. 32-1	GOVT. CE BREHM NO. 1
LOCATION.....	SEC. 22, T37N, R89W	SEC. 1, T24N, R11W	SEC. 3, T24N, R11W
OWNER.....	EXXON CO., U.S.A.	ITR PETROLEUM, INC.	TEXACO INC.
COMPLETED.....	07/09/85	06/09/87	03/12/87
SAMPLED.....	01/12/87	10/02/87	12/02/87
FORMATION.....	EOCE-FORT UNION L	CRET-DAKOTA	CRET-DAKOTA C
GEOLOGIC PROVINCE CODE...	530	535	535
DEPTH, FEET.....	10196	10826	10536
WELLHEAD PRESSURE, PSIG...	3050	4308	4093
OPEN FLOW, MCFD.....	2041	10758	7300
COMPONENT, MOLE PCT			
METHANE.....	93.0	84.1	86.3
ETHANE.....	2.7	7.5	6.4
PROPANE.....	0.7	4.3	3.3
N-BUTANE.....	TRACE	1.2	0.8
ISOBUTANE.....	0.4	0.6	0.4
N-PENTANE.....	0.0	0.3	0.3
ISOPENTANE.....	0.0	0.0	0.1
CYCLOPENTANE.....	TRACE	0.1	0.1
HEXANES PLUS.....	0.1	0.2	0.2
NITROGEN.....	0.4	1.0	1.0
OXYGEN.....	0.1	TRACE	0.1
ARGON.....	0.0	0.1	TRACE
HYDROGEN.....	0.1	0.0	0.0
HYDROGEN SULFIDE**.....	0.0	TRACE	0.0
CARBON DIOXIDE.....	2.6	0.5	0.8
HELIUM.....	TRACE	0.01	0.01
HEATING VALUE*.....	1027	1186	1150
SPECIFIC GRAVITY.....	0.611	0.684	0.666

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 178 SAMPLE 18379
STATE.....	WYOMING
COUNTY.....	SWEETWATER
FIELD.....	MARIANNE
WELL NAME.....	MADEX-FEDERAL NO. 18-1
LOCATION.....	SEC. 18, T20N, R102W
OWNER.....	BURTON-HAWKS, INC.
COMPLETED.....	04/14/80
SAMPLED.....	06/17/87
FORMATION.....	CRET-FRONTIER
GEOLOGIC PROVINCE CODE...	535
DEPTH, FEET.....	5549
WELLHEAD PRESSURE, PSIG...	1100
OPEN FLOW, MCFD.....	275
COMPONENT, MOLE PCT	
METHANE.....	94.6
ETHANE.....	2.2
PROPANE.....	0.7
N-BUTANE.....	0.0
ISOBUTANE.....	0.3
N-PENTANE.....	0.0
ISOPENTANE.....	TRACE
CYCLOPENTANE.....	TRACE
HEXANES PLUS.....	0.1
NITROGEN.....	1.6
OXYGEN.....	0.0
ARGON.....	0.0
HYDROGEN.....	TRACE
HYDROGEN SULFIDE**.....	0.0
CARBON DIOXIDE.....	0.3
HELIUM.....	0.02
HEATING VALUE*.....	1035
SPECIFIC GRAVITY.....	0.590

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 18352	INDEX SAMPLE 18408	INDEX SAMPLE 18441
STATE.....	ARKANSAS	OHIO	PENNSYLVANIA
COUNTY.....	JOHNSON	TUSCARAWAS	ARMSTRONG
FIELD.....	SPADRA	SOUTHERN OHIO FIELDS	INDIANA, LOCAL PRODUCTION
LOCATION.....	SEC. 6, T9N, R23W	24 IN. DISCHARGE	12 IN SUCTION
OWNER.....	TXO PRODUCTION CORP.	EAST OHIO GAS CO.	PEOPLES NATURAL GAS CO.
SAMPLED.....	04/20/87	07/21/87	09/17/87
FORMATION.....	PENN-HALE	NOT GIVEN	DEVO-BRADFORD U
GEOLOGIC PROVINCE CODE...	345	160	160
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	2590	620	90
FLOW, MCFD.....	2000	60000	10000
COMPONENT, MOLE PCT			
METHANE.....	86.5	83.1	94.3
ETHANE.....	1.1	6.6	3.3
PROPANE.....	0.1	2.5	0.5
N-BUTANE.....	0.0	0.8	0.3
ISOBUTANE.....	TRACE	0.5	0.0
N-PENTANE.....	0.0	0.6	0.4
ISOPENTANE.....	0.0	0.0	0.0
CYCLOPENTANE.....	0.0	0.2	0.1
HEXANES PLUS.....	0.0	0.7	0.2
NITROGEN.....	8.7	4.5	0.7
OXYGEN.....	2.3	0.0	TRACE
ARGON.....	0.1	0.0	TRACE
HYDROGEN.....	TRACE	0.3	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.0	TRACE	0.1
HELIUM.....	0.05	0.13	0.08
HEATING VALUE*	899	1139	1066
SPECIFIC GRAVITY.....	0.619	0.682	0.597

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 18442	INDEX SAMPLE 18261	INDEX SAMPLE 18407
STATE.....	PENNSYLVANIA	TEXAS	WEST VIRGINIA
COUNTY.....	INDIANA	PECOS	KANAWHA
FIELD.....	ROCHESTER MILLS/ELK RUN	PERMIAN BASIN AREA	SO. CENTRAL WEST VA. FIELDS
LOCATION.....	8 IN DISCHARGE	36 IN. OUTLET	24 IN. DISCHARGE
OWNER.....	CONSOLIDATED GAS SUPPLY CORP	OASIS PIPE LINE CO.	COLUMBIA GAS TRANSMISSION CO
SAMPLED.....	09/17/87	11/18/86	07/17/87
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	160	430	160
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	600	900	550
FLOW, MCFD.....	14000	101700	32000
COMPONENT, MOLE PCT			
METHANE.....	95.0	88.6	80.8
ETHANE.....	3.0	5.4	10.7
PROPANE.....	0.3	1.9	4.3
N-BUTANE.....	0.3	0.3	1.2
ISOBUTANE.....	0.0	0.4	0.6
N-PENTANE.....	0.4	0.0	0.3
ISOPENTANE.....	0.0	0.2	0.2
CYCLOPENTANE.....	0.1	0.0	0.1
HEXANES PLUS.....	0.2	0.0	0.4
NITROGEN.....	0.5	1.8	1.0
OXYGEN.....	0.0	0.0	0.0
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	0.1	0.6	0.4
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.8	0.1
HELIUM.....	0.07	0.07	0.06
HEATING VALUE*.....	1062	1078	1227
SPECIFIC GRAVITY.....	0.592	0.627	0.701

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 18405	INDEX SAMPLE 18406
STATE.....	WEST VIRGINIA	WEST VIRGINIA
COUNTY.....	SUMMERS	WAYNE
FIELD.....	EASTERN KENTUCKY FIELDS	EASTERN KY & SW W. VA FIELDS
LOCATION.....	20 IN. DISCHARGE	20 IN. DISCHARGE
OWNER.....	COLUMBIA GAS TRANSMISSION CO	COLUMBIA GAS TRANSMISSION CO
SAMPLED.....	07/17/87	07/15/87
FORMATION.....	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	160	160
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	174	320
FLOW, MCFD.....	79000	97000
COMPONENT, MOLE PCT		
METHANE.....	86.3	79.9
ETHANE.....	10.0	12.6
PROPANE.....	1.5	4.3
N-BUTANE.....	0.2	0.8
ISOBUTANE.....	0.2	0.5
N-PENTANE.....	0.0	0.0
ISOPENTANE.....	0.1	0.3
CYCLOPENTANE.....	0.0	0.0
HEXANES PLUS.....	0.0	0.0
NITROGEN.....	1.1	1.2
OXYGEN.....	TRACE	0.0
ARGON.....	TRACE	TRACE
HYDROGEN.....	0.5	0.5
HYDROGEN SULFIDE.....	0.0	0.0
CARBON DIOXIDE.....	TRACE	TRACE
HELIUM.....	0.06	0.05
HEATING VALUE*	1112	1201
SPECIFIC GRAVITY.....	0.630	0.686

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 3. - SAMPLES FROM GAS AND OIL WELLS IN FOREIGN COUNTRIES

	INDEX SAMPLE 18305	INDEX SAMPLE 18306	INDEX SAMPLE 18307
COUNTRY.....	CANADA	CANADA	CANADA
STATE OR PROVINCE.....	NOVA SCOTIA	NOVA SCOTIA	NOVA SCOTIA
FIELD.....	GLENELG	GLENELG	GLENELG
WELL NAME.....	GLENELG NO. N-49	GLENELG NO. N-49 ZONE 1	GLENELG NO. N-49 ZONE 2
LOCATION.....	43D 38'59"N 60D 07'02"W OFFS	43D 38'59"N 60D 07'02"W OFFS	43D 38'59"N 60D 07'02"W OFFS
OWNER.....	SHELL CANADA, LTD.	SHELL CANADA, LTD.	SHELL CANADA, LTD.
COMPLETED.....	08/04/86	08/04/86	08/04/86
SAMPLED.....	02/--/87	02/--/87	02/--/87
FORMATION.....	CRET-MISSISSAUGA	CRET-MISSISSAUGA	CRET-MISSISSAUGA
GEOLOGIC PROVINCE CODE...	000	000	000
DEPTH, FEET.....	11802	11802	11404
WELLHEAD PRESSURE, PSIG...	4400	4400	4400
OPEN FLOW, MCFD.....	100000	100000	100000
COMPONENT, MOLE PCT			
METHANE.....	85.0	89.6	91.0
ETHANE.....	3.8	4.6	4.3
PROPANE.....	1.5	1.9	1.6
N-BUTANE.....	0.2	0.4	0.3
ISOBUTANE.....	0.4	0.3	0.2
N-PENTANE.....	0.0	0.1	0.1
ISOPENTANE.....	0.1	0.1	0.2
CYCLOPENTANE.....	0.1	TRACE	0.0
HEXANES PLUS.....	0.1	0.1	0.1
NITROGEN.....	5.6	0.5	0.5
OXYGEN.....	1.4	0.1	TRACE
ARGON.....	0.1	TRACE	TRACE
HYDROGEN.....	TRACE	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.6	2.3	1.6
HELIUM.....	0.01	0.01	0.01
HEATING VALUE*.....	1001	1077	1075
SPECIFIC GRAVITY.....	0.650	0.638	0.625

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 3. - SAMPLES FROM GAS AND OIL WELLS IN FOREIGN COUNTRIES

	INDEX SAMPLE 18308	INDEX SAMPLE 18309
COUNTRY.....	CANADA	CANADA
STATE OR PROVINCE.....	NOVA SCOTIA	NOVA SCOTIA
FIELD.....	GLENELG	PANUKE
WELL NAME.....	GLENELG NO. N-49 ZONE 3	PANUKE NO. B-90
LOCATION.....	43D 38'59"N 60D 07'02"W OFFS	43D 49'11"N 60D 42'34"W OFFS
OWNER.....	SHELL CANADA, LTD.	SHELL CANADA, LTD.
COMPLETED.....	08/04/86	09/24/86
SAMPLED.....	02/--/87	02/--/87
FORMATION.....	CRET-MISSISSAUGA	CRET-MISSISSAUGA
GEOLOGIC PROVINCE CODE....	000	000
DEPTH, FEET.....	11134	7525
WELLHEAD PRESSURE, PSIG....	4400	600
OPEN FLOW, MCFD.....	100000	400
COMPONENT, MOLE PCT		
METHANE.....	91.1	77.9
ETHANE.....	4.2	2.0
PROPANE.....	1.5	4.6
N-BUTANE.....	0.3	3.2
ISOBUTANE.....	0.2	3.1
N-PENTANE.....	0.1	1.0
ISOPENTANE.....	0.1	1.1
CYCLOPENTANE.....	0.1	TRACE
HEXANES PLUS.....	0.1	0.5
NITROGEN.....	0.6	3.8
OXYGEN.....	0.1	0.1
ARGON.....	TRACE	TRACE
HYDROGEN.....	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0
CARBON DIOXIDE.....	1.7	2.7
HELIUM.....	0.01	0.02
HEATING VALUE*.....	1072	1272
SPECIFIC GRAVITY.....	0.626	0.802

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

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